Version3.04 2003.02.05

AIR CONDITIONER INTERFACE

LM ADAPTER

MODEL: LMAP03U-E

Network Variables Specification

Appendix A: Fahrenheit conversion of Centigrade data

ProgramID: 9-000A2-0076-0003-03
XIF: 0303lm30.xif

*1.LONWORKS® , and the Echelon logo are trademarks of Echelon Corporation registered in the United States and other countries.

*2.This product is not LONMARK product.

*3.Please contact the dealer about obtaining XIF.

*4.XIF is of operation check settled in LonMaker for Windows 3.0(SP2).

MITSUBISHI ELECTRIC
MITSUBISHI ELECTRIC CORPORATION
AIR-CONDITIONING & REFRIGERATION SYSTEMS WORKS

1.Specification

1-1.Object Model

These specifications apply to the communication interface used to connect the LonWorks network and the Mitsubishi Electric M-NET compatible products.

<Model name>

1. Multiple split type air conditioners CITY MULTI
2. Split-type air conditioners Mr.SLIM
   NOTE:A-M Converter(PAC-SF48MA-E) is necessary.
3. Heat recovery ventilators LOSSNAY
   NOTE:LOSSNAY Adapter(PZ-53ADF-E) is necessary.

1-2.Explanation of Function Setting

This product requires a function setting switch because of the connected model, system configuration and control functions.

SW NO.	switch name	Function		Note	Factory setting	Set timing
SW1－1	Function switch of local prohibit	**ON**	local prohibit effective	Operation local prohibit NV input from LonWorks becomes Effective when switch ON.	OFF	Before turning on the power supply
		OFF	local prohibit ineffective	Operation local prohibit NV input from LonWorks becomes invalid when switch OFF		
SW1－2	Used together with MELANS switch *2	**ON**	used together with MELANS *4		OFF	Before turning on the power supply
		OFF	not used together with MELANS *5			
SW1－3	Indoor temperature state interval switch	**ON**	Transmission interval (1minutes or more)	*The number of indoor units connected should be 30 or less *6	OFF	Before turning on the power supply
		OFF	Transmission interval (10 minutes or more)			
SW1－4	Reset Filtersign/Select enable/disable operation duration	**ON**	effective	When "ON",the reset filter sign input and the operation duration output are enabled.	OFF	Before turning on the power supply
		OFF	ineffective	When "OFF",the reset filter sign input and the operation duration output are disabled		
SW1－5	Function switch of LOSSNAY *3	**ON**	LOSSNAY is operated from LONWORKS.	Please turn on the switch when LOSSNAY is operated from LonWorks.	OFF	Before turning on the power supply
		OFF	LOSSNAY interlocks with indoor units	Please turn off the switch when LOSSNAY interlocks with indoor units		
SW1－7	Function switch of SNVT_switch	**ON**	SNVT standard	When "ON",the specifications of the NV using the SNVT_switch comply with the SNVT Standards.	OFF	Before turning on the power supply
		OFF	original	When "OFF",the NV using the SNVT_switch has original specifications.		
SW1－8	Select enable/disable forced thermostat OFF	**ON**	effective	When "ON",the forced thermo OFF NV input/output are enabled.	OFF	Before turning on the power supply
		OFF	ineffective	When "OFF",the forced thermo OFF NV input/output are disabled		
SW1－9	Indoor units test run switch	**ON**	ON (test run) is transmitted to the indoor units		OFF	Always
		OFF	OFF is transmitted to the indoor units			
SW3－2	Initialization switch of the air conditioners units	**ON**	Connected cancellation command is transmitted to the indoor units		OFF	Always
		OFF	None			

Notes:

∗1: Always use together with the local remote controller or system controller.
*2: Always register the LM ADAPTER as a system controller when using together with the system controller.
*3: The functions used with the LM ADAPTER are changed. The air conditioner and LOSSNAY cannot be set to interlock with the LM ADAPTER. Set with the system controller or local remote controller.
*4: Carry out an instruction input at the unit of the lowest address unit in the same group. The instructions to other units are disregarded. However, a state output is output for every unit. Forced thermostat OFF needs an instruction input for every unit.
*5: Input the same instructions to all the units in the same group.
*6: Make a monitor interval into 1 minute, and when you use both the functions of "local prohibit", and the "forced thermostat OFF", give 25 sets or less.

1-3.Functions

Item		nv No.	Description
Operation	Request All Off	nv1	Stops the operation of all air conditioners. The ON/OFF operation is invalid during emergency stop.
	Request On/Off	nv1n	Run and stop operation.
	Request Mode	nv3n	Sets the operation mode.
	Setpoint	nv5n	Sets the temperature.
	Request LOSSNAY Mode	nv7n	Sets the LOSSNAY operation mode.
	Request FanSpeed	nv9n	Sets the fan speed.
	Request Local Prohibit On/Off	nv11n	Sets the local remote controller to operation prohibit (On/Off).
	Request Local Prohibit Mode	nv13n	Sets the local remote controller to operation prohibit (operation mode).
	Request Local Prohibit SetPoint	nv15n	Sets the local remote controller to operation prohibit (temperature setting).
	Request Collective Local Prohibit	nv4	Sets the local remote controllers of all air conditioners to operation prohibit (On/Off, operation mode, temperature setting).
	Request Forced Thermostat OFF	nv17n	Forcibly turns the air conditioner thermostat OFF.
	Filter Sign Reset	nv19n	The run time (for filter) of air conditioner is reset.
	Time Stamp	nv12	Sets the local remote controller time.
	Request Limit Temperature Setting Range	nv13	Sets the temperature setting range of local remote controller.
	Request Simplified Locking	nv14	Sets the local remote controller switch's simple lock, and displays the mode and intake temperature.
Monitor	Emergency state	nv3	Output the emergency stop state.
	On/Off state	nv2n	Outputs the On/Off state.
	Collective On/Off state	nv2	Outputs the On/Off state for all air conditioners.
	Mode state	nv4n	Outputs the operation mode setting state.
	Setpoint State	nv6n	Outputs the temperature setting state.
	LOSSNAY Mode State	nv8n	Outputs the LOSSNAY operation mode setting state.
	FanSpeed state	nv10n	Outputs the fan speed setting state.
	Local Prohibit On/Off State	n12n	Outputs the local remote controller operation prohibit (On/Off) state.
	Local Prohibit Mode State	nv14n	Outputs the local remote controller operation prohibit (operation mode) state.
	Local Prohibit SetPoint State	nv16n	Outputs the local remote controller operation prohibit (temperature setting) state.
	Collective Local Prohibit State	nv5	Outputs the local remote controller collective operation prohibit state.
	Forced Thermostat OFF State	nv18n	Outputs the forced thermostat OFF state.
	Run Time for Filter	nv20n	Outputs the run time (for filter) of air conditioner.
	Space Temperature State	nv21n	Outputs the intake temperature of air conditioner.
	Defrost State	nv9	Outputs the defrosting state of indoor unit or outdoor unit.
	Group Number	nv29n	Outputs the group number of the indoor unit.
	Alarm State	nv22n	Outputs the presence of air conditioner errors.
	Collective Alarm for Indoor Unit	nv6	Outputs the presence of errors in all air conditioners.
	Collective Alarm for LM ADAPTER	nv7	Outputs the presence of communication errors between the LM ADAPTER and air conditioner.
	Error Code	nv23n	Outputs the presence of air conditioner errors content (error code).
	Error Address	nv24n	Outputs the error source (M-NET address) when an air conditioner error occurs.
	Thermo On/Off state_1 (*1)	nv25n	Outputs the air conditioner operation, thermostat and auxiliary heater states.
	Thermo On/Off state_2 (*1)	nv26n	Outputs the thermostat state.
	Model Code (*1)	nv28n	Outputs the air conditioner model code.

Note

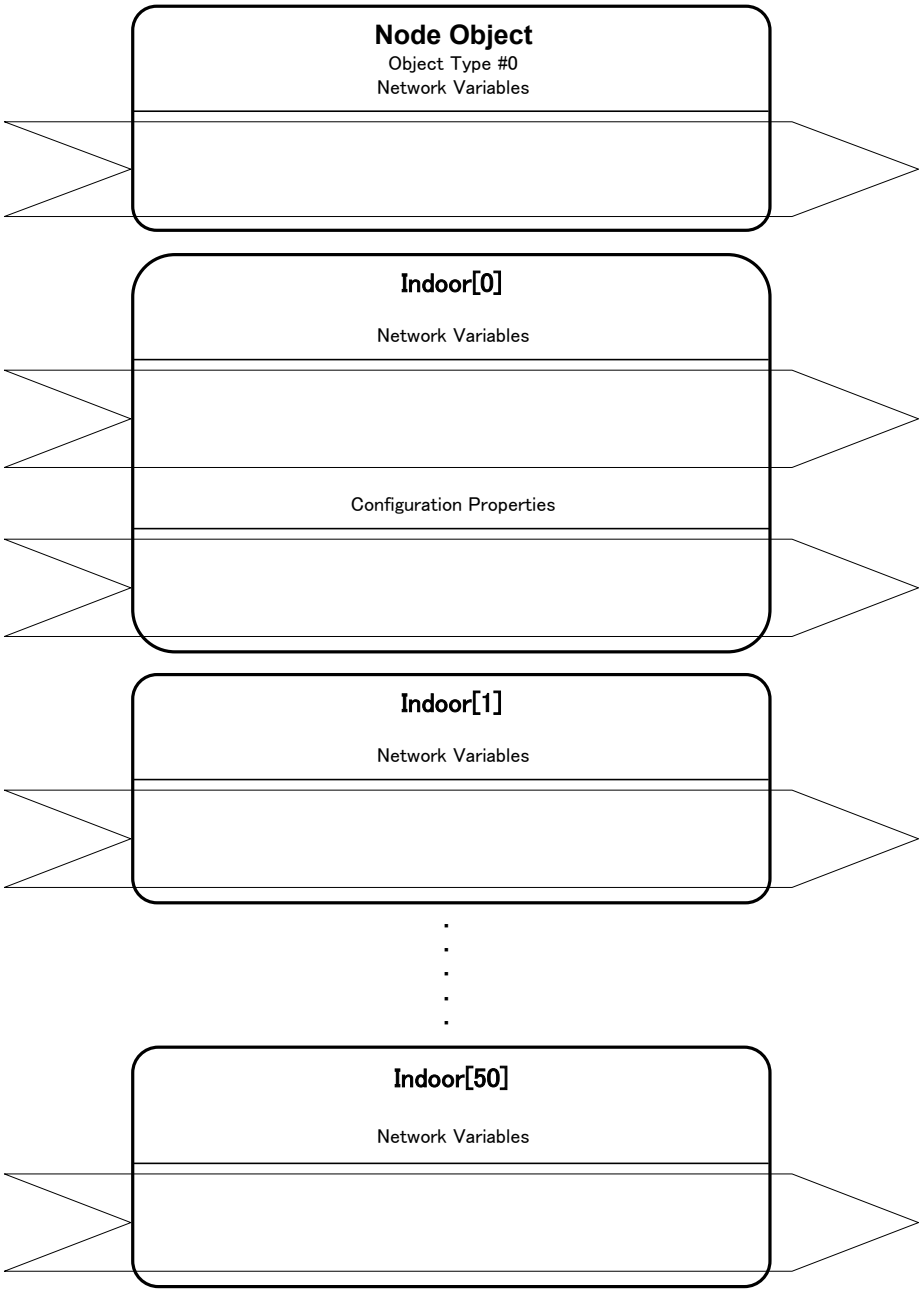
*1: This product does not have a charge function.
The charge (apportioning) function must be prepared separately in the master system.

2.Object Details

2-1.Overview

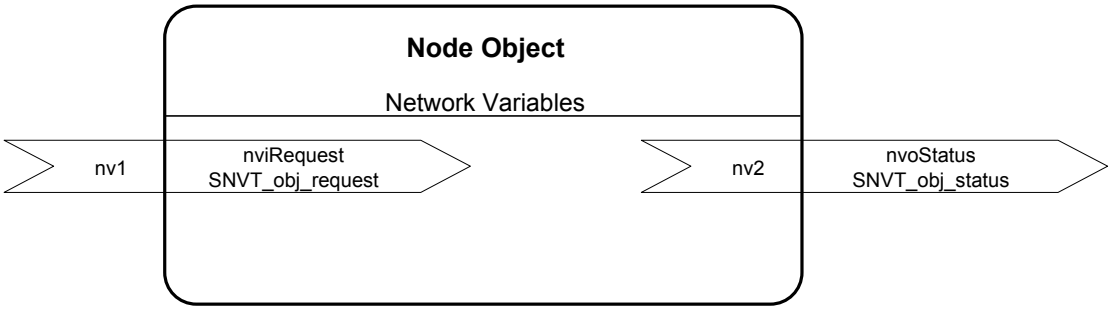
The LM adaptor has the node object, Indoor [0] and Indoor [1] to Indoor [50] objects. Each object contains the network variables or configuration properties for all models.

Refer to each object (2.4 to 2.6) for the network variables that can be used with each model (unit).



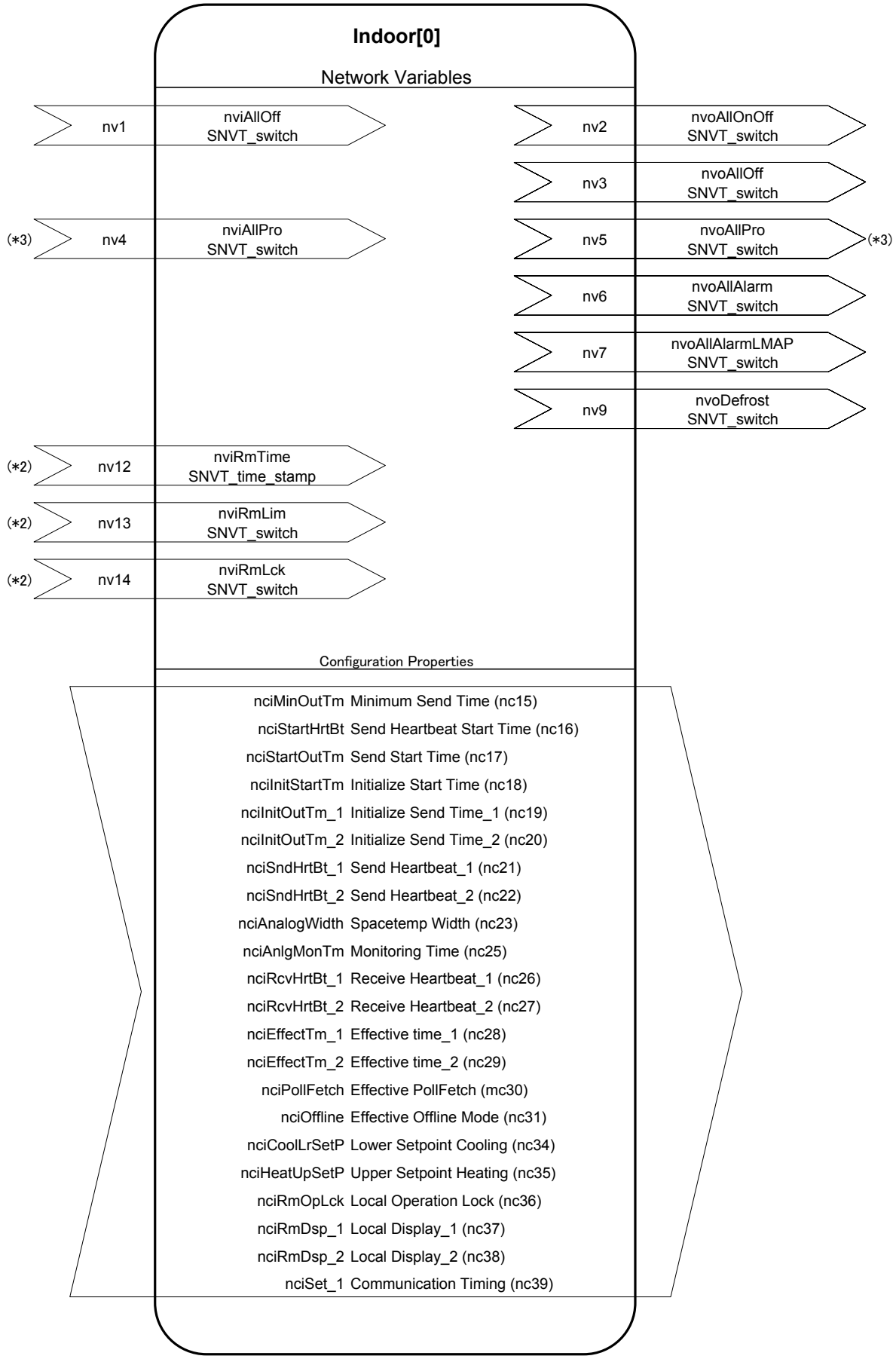
Node Object	Includes network variables of Node Object.
Indoor[0]	Includes collective network variables and configuration properties.
Indoor[1]	Includes network variables of 1st Indoor unit.
Indoor[2]	Includes network variables of 2nd Indoor unit.
:	:
Indoor[50]	Includes network variables of 50th Indoor unit.

*2-2.Node Object（*1）*



Note
∗1: stencil for LonMaker:Node Object

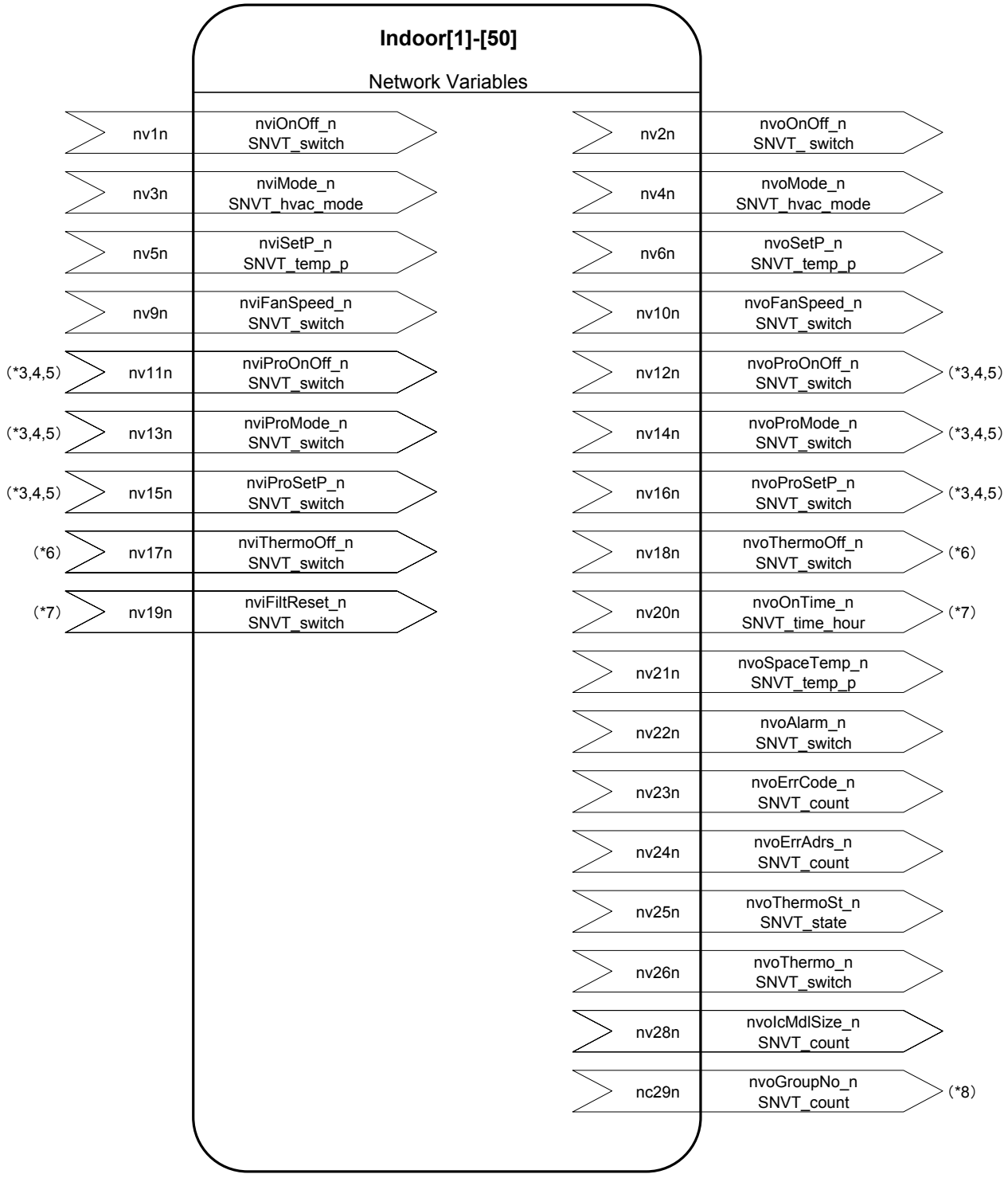
*2-3.Collective operations/monitoring and Configuration Properties(*1)*



Notes

*1: stencil for LonMaker:Indoor[0]
*2: It is possible to use with an "ME" remote controller.
*3: It is possible to use with an "MA" remote controller.

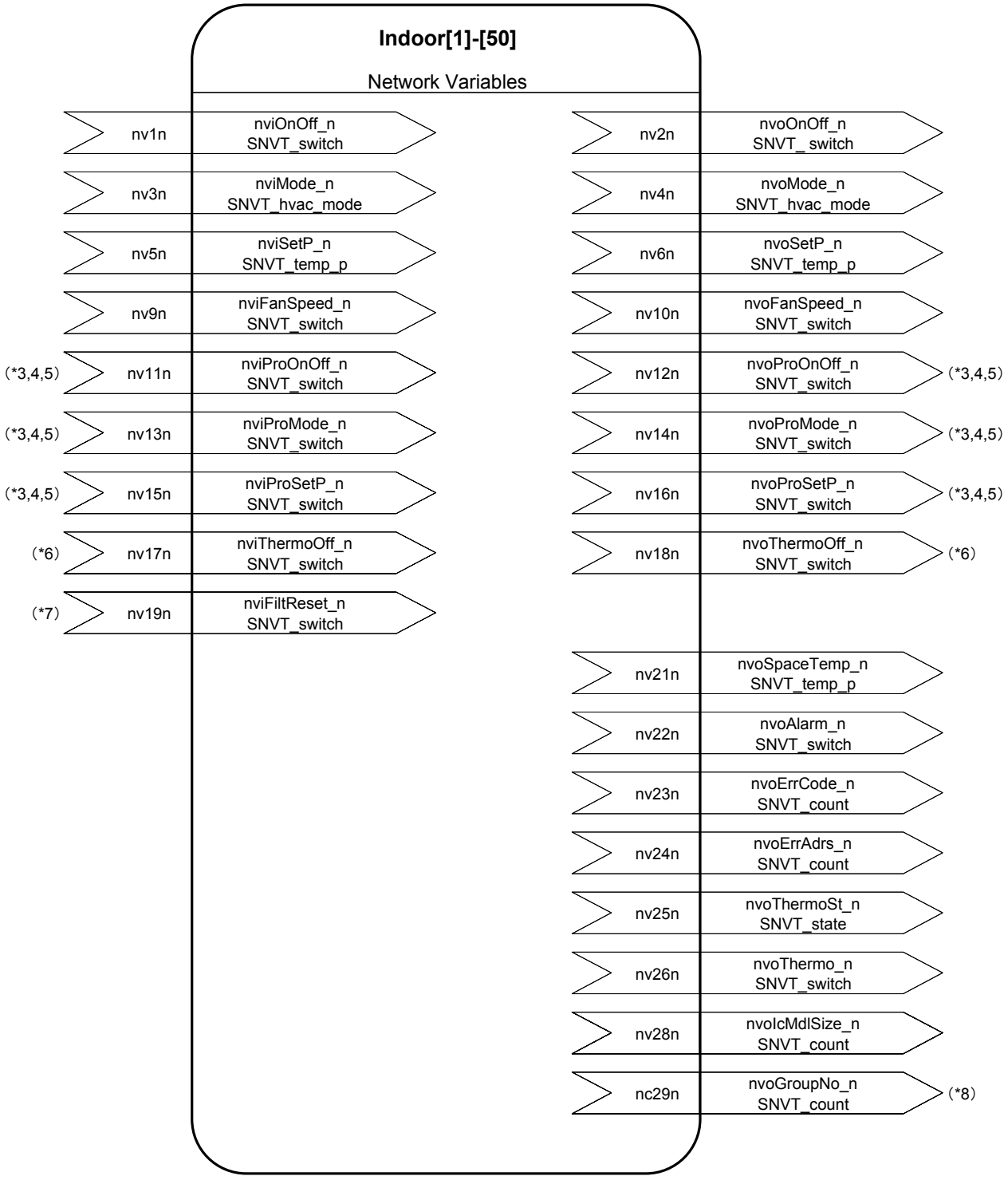
2-4.Indoor unit



Notes

*1: stencil for LonMaker:Indoor[1]-[50]
*2: "n" of the network variable shows M-NET address of indoor units.
*3: It may be unable to be used by the system configuration of air-conditioners units.
*4: It is possible to use with an "MA" remote controller.
*5: For the use of this function, turn ON the switch(SW1-1) on LM ADAPTER.(Factory setting "OFF")
*6: For the use of this function, turn ON the switch(SW1-8) on LM ADAPTER.(Factory setting "OFF")
*7: For the use of this function, turn ON the switch(SW1-4) on LM ADAPTER.(Factory setting "OFF")
*8: It is possible to use with other system controller.

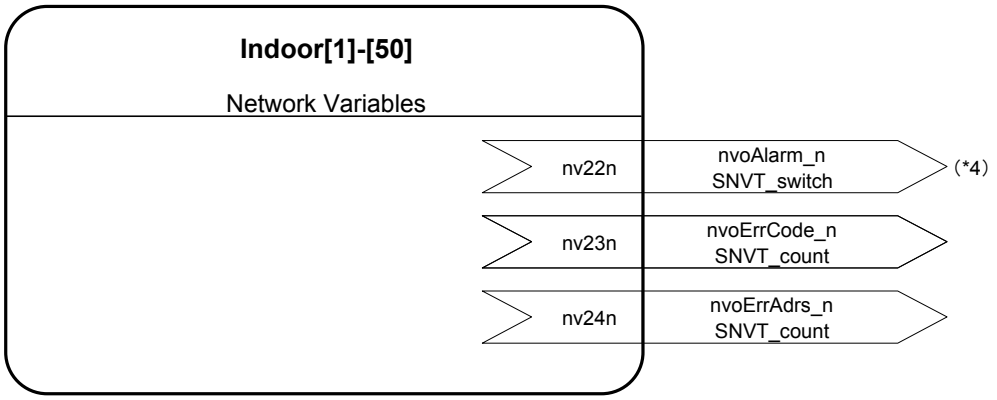
2-5.Mr.SLIM



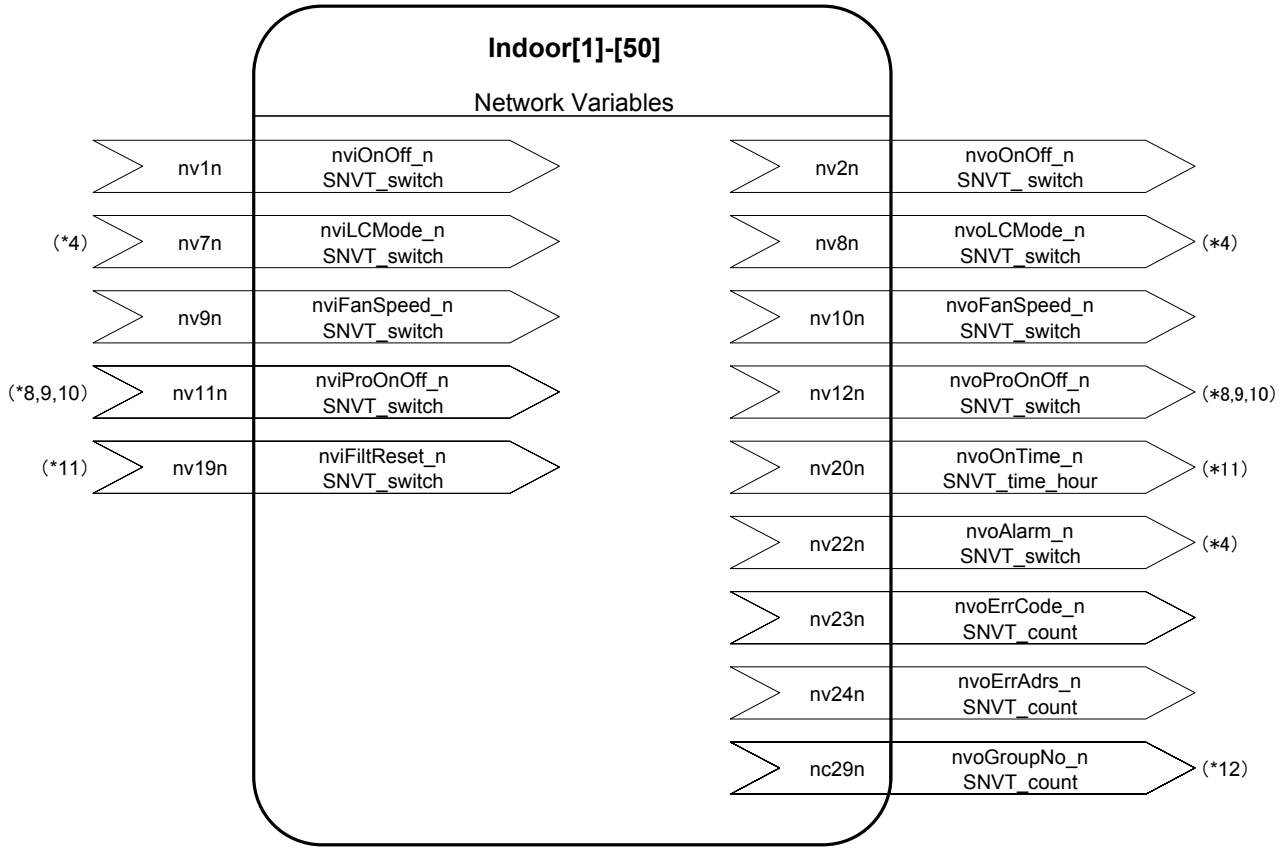
*1: stencil for LonMaker:MrSLIM[1]-[50]
*2: "n" of the network variable shows M-NET address of Mr.SLIM.
*3: It may be unable to be used by the system configuration of air-conditioners units.
*4: It is possible to use with an "MA" remote controller.
*5: For the use of this function, turn ON the switch(SW1-1) on LM ADAPTER.(Factory setting "OFF")
*6: For the use of this function, turn ON the switch(SW1-8) on LM ADAPTER.(Factory setting "OFF")
*7: For the use of this function, turn ON the switch(SW1-4) on LM ADAPTER.(Factory setting "OFF")
*8: It is possible to use with other system controller.

2-6.LOSSNAY

(1)LOSSNAY interlocks with the indoor unit.(*1,3)



(2)LOSSNAY is operated from LONWORKS.(*5,6,7)



Notes:

*1: stencil for LonMaker:iLOSSNAY[1]-[50]
*2: "n" of the network variable shows M-NET address of LOSSNAY.
*3: LOSSNAY is not controlled from a LONWORKS network.
*4: It may be unable to be used by the system configuration of air-conditioners units or the model of LOSSNAY.
*5: LOSSNAY is controlled from a LONWORKS network.
*6: stencil for LonMaker:LOSSNAY[1]-[50]
*7: Please turn ON the switch(SW1-5) when LOSSNAY is operation from LONWORKS.(Factory setting "OFF")
*8: There is a case which cannot be used with the system configuration of the air-conditioners units.
*9: It is possible to use with an "MA" remote controller.
*10: For the use of this function, turn ON the switch(SW1-1) on LM ADAPTER.(Factory setting "OFF")
*11: For the use of this function, turn ON the switch(SW1-8) on LM ADAPTER.(Factory setting "OFF")
*12: It is possible to use with other system controller.

3.SNVT Table

3-1.The network variables for individual operation/monitoring.

nv No. (*1)	Name (*1)		I/O	Model				Page.
				CITY MULTI	Mr.SLIM	LOSSNAY		
						interlocks with the indoor unit	operation from LonWorks	
1n	Request On/Off	nviOnOff_n *SNVT_switch*	IN	○	○	△ (*9)	○	14
2n	On/Off run state	nvoOnOff_n *SNVT_switch*	OUT	○	○	△ (*9)	○	14
3n	Request Mode	nviMode_n *SNVT_hvac_mode*	IN	○ (*6)	○ (*6)			15
4n	Mode state	nvoMode_n *SNVT_hvac_mode*	OUT	○	○			15
5n	SetPoint	nviSetP_n *SNVT_temp_p*	IN	○ (*6)	○ (*6)			16
6n	SetPoint state	nvoSetP_n *SNVT_temp_p*	OUT	○ (*5)	○ (*5)			16
7n	Request LOSSNAY Mode	nviLCMode_n *SNVT_switch*	IN				○ (*3)	17
8n	LOSSNAY Mode state	nvoLCMode_n *SNVT_switch*	OUT				○ (*3)	17
9n	Request Fanspeed	nviFanSpeed_n *SNVT_switch*	IN	○ (*6)	○ (*6)		○ (*6)	18
10n	FanSpeed state	nvoFanSpeed_n *SNVT_switch*	OUT	○ (*6)	○ (*6)		○ (*6)	18
11n	Request Local Prohibit On/Off	nvoProOnOff_n *SNVT_switch*	IN	○ (*7,8)	○ (*7)		○ (*7)	19
12n	Local Prohibit On/Off state	nvoProOnOff_n *SNVT_switch*	OUT	○ (*7,8)	○ (*7)		○ (*7)	19
13n	Request Local Prohibit Mode	nviProMode_n *SNVT_switch*	IN	○ (*7,8)	○ (*7)			20
14n	Local Prohibit Mode state	nvoProMode_n *SNVT_switch*	OUT	○ (*7,8)	○ (*7)			20
15n	Request Local Prohibit SetPoint	nviProSetP_n *SNVT_switch*	IN	○ (*7,8)	○ (*7)			21
16n	Local Prohibit SetPoint state	nvoProSetP_n *SNVT_switch*	OUT	○ (*7,8)	○ (*7)			21
17n	Request Forced Thermostat OFF	nviThermoOff_n *SNVT_switch*	IN	○	○			22
18n	Forced Thermostat OFF state	nvoThermoOff_n *SNVT_switch*	OUT	○	○			22
19n	Filter Sign Reset	nviFiltReset_n *SNVT_switch*	IN	○	○		○	23
20n	Filter Run Time	nvoOnTime_n *SNVT_time_hour*	OUT	○			○	23
21n	Space Temperature	nvoSpaceTemp_n *SNVT_temp_p*	OUT	○	○			24
22n	Alarm state	nvoAlarm_n *SNVT_switch*	OUT	○ (*2)	○ (*2)	○ (*2)	○ (*2)	25
23n	Error Code	nvoErrCode_n *SNVT_count*	OUT	○ (*2)	○ (*2)	○ (*2)	○ (*2)	25
24n	Error Unit Address	nvoErrAdrs_n *SNVT_count*	OUT	○ (*2)	○ (*2)	○ (*2)	○ (*2)	26
25n	Thermo On/Off state_1	nvoThermoSt_n *SNVT_state*	OUT	○	○			27
26n	Thermo On/Off state_2	nvoThermo_n *SNVT_switch*	OUT	○	○			27
28n	Model Code	nvoIcMdlSize_n *SNVT_count*	OUT	○ (*4)	○ (*4)			28
29n	Group Number	nvoGroupNo_n *SNVT_count*	OUT	○ (*10)	○ (*10)		○ (*10)	29

Notes:

*1: The value "n" is M-NET address of indoor unit
ex) Request On/Off to the 20th indoor unit.
nvNo :120
Name :nviOnOff_020

*2: The air conditioner maintenance error (minor fault) is not output.

*3: It may be unable to be used by the system configuration of air-conditioners units or the model of LOSSNAY.

*4: This is not output with LONWORKS network. Monitoring with Poll request or Fetch request is required.

*5: The monitor interval must be set in M-NET with the configuration properties (CP).

*6: The range (temperature setting, operation mode, wind speed setting) will differ according to the connected devices.

*7: It is possible to use with an "MA" remote controller (PAR-20MAU) .

*8: When some of the models marketed in July 2002 are used, either MA(PAR-20MAU) or ME(PAR-F27MEA-US) remote controller is required.

*9: The interlocked LOSSNAY is run and stopped with operations to each indoor unit.

*10: It is possible to use with other system controller.

3-2.The network variables for collective operation/monitoring.

nv No. (*1)	Name (*1)		I/O	Model				Page.
				CITY MULTI	Mr.SLIM	LOSSNAY		
						interlocks with the indoor unit	operation from LonWorks	
1	Request All Off	nviAllOff *SNVT_switch*	IN	○	○	○	○	30
3	Emergency state	nvoAllOff *SNVT_switch*	OUT	○	○	○	○	30
2	Collective On/Off state	nvoAllOnOff *SNVT_switch*	OUT	○	○	△ (*1)	○	31
4	Request Collective Operation Prohibit	nviAllPro *SNVT_switch*	IN	○ (*2,3)	○ (*2)			32
5	Collective Local Prohibit state	nvoAllPro *SNVT_switch*	OUT	○	○			32
6	Collective Alarm for Indoor Unit	nvoAllAlarm *SNVT_switch*	OUT	○	○	○	○	33
7	Collective Alarm for LM Adapter	nvoAllAlarmLMAP *SNVT_switch*	OUT	○	○	○	○	33
9	Defrost State	nvoDefrost *SNVT_switch*	OUT	○	○			34
12	Time Stamp	nviRmTime *SNVT_time_stamp*	IN	○ (*5)				34
13	Request Limit Temperature Setting Range	nviRmLim *SNVT_switch*	IN	○ (*4,5)				35
14	Request Simplified Locking	nviRmLck *SNVT_switch*	IN	○ (*5)				35

*1: The interlocked LOSSNAY is run and stopped with operations to each indoor unit.
*2: It is possible to use with an "MA" remote controller (PAR-20MAU) .
*3: When some of the models marketed in July 2002 are used, either the MA (PAR-20MAU) or ME (PAR-F27ME) remote controller can be used for the local remote controller. (The M-NET small remote controller cannot be used.)
*4: The cool lower limit value and heat upper limit value must be set with the configuration properties (CP).
*5: ME remote control is used , and it can be used when an air-conditioning is a standard mode.

3-3.Configuration Properties

Item		Description	nc No.	Name	Valid Range	Unit,	Default	Page.
1	Minimum Send Time	Set the minimum transmission interval between output network variables.	nc15	nciMinOutTm *SNVT_time_sec*	1.0 to 600.0 seconds	1sec	6553.5 seconds (invalid)	36
2	Send Heartbeat Start Time	Set the start time of network variable change at power ON.	nc16	nciStartHrtBt *SNVT_time_sec*	1200.0 to 6540.0 seconds	60sec	6553.5 seconds (As 1800 seconds)	37
3	Send Start Time	Set the automatic update start time at power ON.	nc17	nciStartOutTm *SNVT_time_sec*	1200.0 to 6540.0 seconds	60sec	6553.5 seconds (As 1800 seconds)	37
4	Initialize Start Time	Set the start time of initial output change at power ON.	nc18	nciInitStartTm *SNVT_time_sec*	0.0 second、1200.0 to 3600.0 seconds	60sec	6553.5 seconds(invalid)	38
5	Initialize Send Time_1	Set the minimum transmission interval between output network variables at initial output.	nc19	nciInitOutTm_1 *SNVT_time_sec*	0.0 second、0.1 to 1.0 seconds	0.1sec	6553.5 seconds (invalid)	39
6	Initialize Send Time_2	Set the minimum transmission interval between each unit during initial output.	nc20	nciInitOutTm_2 *SNVT_time_sec*	0.0 second、5.0 to 50.0 seconds	1.0sec	6553.5 seconds (invalid)	39
7	Send Heartbeat_1	Set the output network variable's update interval.	nc21	nciSndHrtBt_1 *SNVT_time_sec*	0.0 second、600.0 to 6540.0 seconds	60sec	6553.5 seconds (invalid)	40
8	Send Heartbeat_2	Set the output network variable's update interval.	nc22	nciSndHrtBt_2 *SNVT_time_sec*	SW1-3 is OFF：0.0 second、600.0～6540.0 seconds SW1-3 is ON：0.0 second、60.0 to 6540.0 seconds	10sec	6553.5 seconds (invalid)	40
9	Spacetemp Width	Set the minimum fluctuation width of the output when the indoor temperature state output changes.	nc24	nciAnalogWidth *SNVT_temp_p*	0.5 to 2.0℃	0.5℃	-0.01℃(As 1.0℃)	41
10	Monitoring Time	Set the set time monitor interval of the indoor temperature for the indoor unit.	nc25	nciAnlgMonTm *SNVT_time_sec*	SW1-3 is OFF：0.0 second、600.0 to 6540.0 seconds	10sec	6553.5 seconds (As 600.0 seconds)	41
11	Receive Heartbeat_1	Set the maximum elapse time from the previous update.	nc26	nciRcvHrtBt_1 *SNVT_time_sec*	600.0 to 6540.0 seconds	60sec	0.0 second (As 1800.0 seconds)	42
12	Receive Heartbeat_2	Set the maximum elapse time from the previous update.	nc27	nciRcvHrtBt_2 *SNVT_time_sec*	600.0 to 6540.0 seconds	60sec	0.0 second (As 1800.0 seconds)	42
13	Effective Time_1	Set the effective time for the emergency stop command.	nc28	nciEffectTm_1 *SNVT_time_sec*	60.0 to 6540.0 seconds	60sec	6553.5 seconds (As 600.0 seconds)	43
14	Effective Time_2	Set the effective time for the collective operation prohibit command.	nc29	nciEffectTm_2 *SNVT_time_sec*	60.0 to 600.0 seconds	60sec	6553.5 seconds (As 600.0 seconds)	43
15	Effective PollFetch	Set the presence of a response for poll (Fetch) requests in respect to the output network variables.	nc30	nciPollFetch *SNVT_switch*	State=0(Response)、1(non-response)	--	0(disable) *Always effective	44
16	Effective Offline Mode	Set the validity of the offline mode at power ON.	nc31	nciOffline *SNVT_switch*	State=0(disable)、1(enable)	--	0(disable) *Always effective	45
17	Lower Setpoint Cooling	Set the cool/dry lower limit temperature setting value for the local remote controller.	nc34	nciCoolLrSetP *SNVT_temp_p*	19.0℃ to 30.0℃	1.0℃	- 0.01℃(As 19℃)	46
18	Upper Setpoint Heating	Set the heat upper limit temperature setting value for the local remote controller.	nc35	nciHeatUpSetP *SNVT_temp_p*	17.0℃ to 28.0℃	1.0℃	- 0.01℃(As 28℃)	46
19	Local Operation Lock	Set the simple lock setting value for the local remote controller.	nc36	nciRmOpLck *SNVT_switch*	State=0(All button)、1(except Start/Stop button)	--	0(All button)	46
20	Local Display_1	Set the validity of the automatic actual operation mode display for the local remote controller.	nc37	nciRmDsp_1 *SNVT_switch*	State=0(display)、1(no display)	--	0(display)	47
21	Local Display_2	Set the validity of the intake temperature display for the local remote controller.	nc38	nciRmDsp_2 *SNVT_switch*	State=0(display)、1(no display)	--	0(display)	47
22	Communication Timing	Set the networks communication start timing.	nc39	nciSet_1 *SNVT_switch*	State=0(initialize)、1(setting time)	--	0(initialize)	48

3-4.The correspondence lists of Configuration Properties and Network Variables

	Functions		operation (request)														
			On/Off	Mode	SetPoint	LOSSNAY Mode	Fanspeed	Local Prohibit On/Off	Local Prohibit Mode	Local Prohibit SetPoint	Forced Thermostat OFF	Filter Sign Reset	All Off	Collective Local Prohibit	Time Stamp	Limit Temperature Setting Range	Simplified Locking
			nv1n	nv3n	nv5n	nv7n	nv9n	nv11n	nv13n	nv15n	nv17n	nv19n	nv1	nv4	nv12	nv13	nv14
1	Minimum Send Time	nc15															
2	Send Heartbeat Start Time	nc16															
3	Send Start Time	nc17															
4	Initialize Start Time	nc18															
5	Initialize Send Time_1	nc19															
6	Initialize Send Time_2	nc20															
7	Send Heartbeat_1	nc21															
8	Send Heartbeat_2	nc22															
9	Spacetemp Width	nc24															
10	Monitoring Time	nc25															
11	Receive Heartbeat_1	nc26						●	●	●							
12	Receive Heartbeat_2	nc27									●						
13	Effective time_1	nc28											●				
14	Effective time_2	nc29												●			
15	Effective PollFetch	nc30															
16	Effective Offline Mode	nc31															
17	Lower Setpoint Cooling	nc34														●	
18	Upper Setpoint Heating	nc35														●	
19	Local Operation Lock	nc36															●
20	Local Display_1	nc37														●	●
21	Local Display_2	nc38														●	●
22	Communication Timing	nc39															

	Functions		monitoring (state)																							
			On/Off	Mode	Setpoint	LOSSNAY Mode	FanSpeed	Local Prohibit On/Off	Local Prohibit Mode	Local Prohibit SetPoint	Forced Thermostat OFF	Filter Run Time	Space Temperature	Alarm	Error Code	Error Unit Address	Thermo On/Off 1	Thermo On/Off 2	Capacity Saving	Mode Code	Group Number	Collective On/Off	Emergency	Collective Local Prohibit	Collective Alarm for Indoor Unit	Collective Alarm for LM ADAPTER	Collective Defrost
			nv2n	nv4n	nv6n	nv8n	nv10n	nv12n	nv14n	nv16n	nv18n	nv20n	nv21n	nv22n	nv23n	nv24n	nv25n	nv26n	nv27n	nv28n	nv29n	nv2	nv3	nv5	nv6	nv7	nv9
1	Minimum Send Time	nc15	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●			■	■	■	■	■	■
2	Send Heartbeat Start Time	nc16	●	●	●	●	●						●														
3	Send Start Time	nc17	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●			●	●	●	●	●	●
4	Initialize Start Time	nc18	●	●	●									●	●	●	●	●	●			●	●		●	●	
5	Initialize Send Time_1	nc19	●	●	●									●	●	●	●	●	●			●	●		●	●	●
6	Initialize Send Time_2	nc20	●	●	●									●	●	●	●	●	●			●	●		●	●	●
7	Send Heartbeat_1	nc21	●	●	●	●	●																				
8	Send Heartbeat_2	nc22											●														
9	Spacetemp Width	nc24											●														
10	Monitoring Time	nc25											●														
11	Receive Heartbeat_1	nc26																									
12	Receive Heartbeat_2	nc27																									
13	Effective time_1	nc28																									
14	Effective time_2	nc29																									
15	Effective PollFetch	nc30	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●		●			●		●
16	Effective Offline Mode	nc31	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
17	Lower Setpoint Cooling	nc34																									
18	Upper Setpoint Heating	nc35																									
19	Local Operation Lock	nc36																									
20	Local Display_1	nc37																									
21	Local Display_2	nc38																									
22	Communication Timing	nc39																									

■:Effective between collective output variable.

4.Network Variables

1n Request On/Off

network input SNVT_switch nviOnOff_n;

This input network variable is used to run or stop the indoor unit or ventilator (during independent non-interlocked operation).
When the ventilator (LOSSNAY) is registered as interlocking with indoor unit, it will turn the indoor unit ON (for high speed) and OFF. Instructions according to this network variable in under nvoAllOff's output of the state of "Emergency Off" are disregarded.

Valid Range

Unit State		SW1-7 : OFF		SW1-7 : ON	
indoor unit	interlocked ventilator	state	value	state	value
OFF	OFF	0	0% to 99.5 % (*1)	0	not used
				1 (*2)	0
	ON(high)	0	100% (*1,3)		
ON	ON(high)	1	not used	1 (*2)	0.5% to 100% (*3)
		else	not used		

*1:The value field is set in 0% usually.
*2:The setting to state=0x02-0xFE is interpreted as state=0x01.
The setting to state=0xFF is invalid.
*3:The setting to over 100% is interpreted as 100%.

Default Value

The default value is determined by the state of the air conditioner (indoor unit).
This variable becomes value = 0 until the value is updated after the power supply of LM ADAPTER.

2n On/Off run state

network output SNVT_switch nvoOnOff_n;

This output network variable indicates the present On/Off state of the indoor unit or ventilator.
When the ventilator (LOSSNAY) is registered interlocking with the indoor unit, the state of the ventilator will not be output, but it will operate (On/Off) the same as the indoor unit.

Valid Range

Unit State		SW1-7 : OFF		SW1-7 : ON	
indoor unit	interlocked ventilator	state	value	state	value
OFF	OFF	0	0%	0	0
	ON(low)	0	50%		
	ON(high)	0	100%		
ON	any	1	0	1	100%

When Transmitted

This variable is transmitted promptly as its state changes.
This variable is also transmitted as the state changes by the operation from the local side such as a local remote controller.
This variable is output by the nciInitStartTm (Initialize Start Time) at the powering of LM ADAPTER.

Update Rate

The value defined by nciSndHrtBt_1 (Send Heartbeat_1) and nciMinOutTm (Minimum Send Time) is valid.

Default Service Type

Acknowledged

3n **Request mode**

network input SNVT_hvac_mode nviMode_n;

This input network variable is used to change the operation mode of the indoor unit.
Some operation modes may not be compatible depending on the model.

Valid Range

value	definition	Active mode
0	HVAC_AUTO	Auto mode
1	HVAC_HEAT	Heat mode
3	HVAC_COOL	Cool mode
5	HVAC_PRE_COOL	Dry mode
9	HVAC_FAN_ONLY	Fan mode
else	-	Fan mode

Default Value

The default value is determined by the state of the air conditioner (indoor unit).
This variable becomes value = 0 until the value is updated after the power supply of LM ADAPTER.

4n **Mode state**

network output SNVT_hvac_mode nvoMode_n;

This output network variable indicates the present mode of the indoor unit.

Valid Range

value	definition	Active mode
0	HVAC_AUTO	Auto mode
1	HVAC_HEAT	Heat mode
3	HVAC_COOL	Cool mode
5	HVAC_PRE_COOL	Dry mode
9	HVAC_FAN_ONLY	Fan mode
FF	HVAC_NUL	value not available

＊The value is 0 while LM ADAPTER is initialized.

When Transmitted

This variable is transmitted promptly as the state changes.
This variable is also transmitted as the state changes by the operation from the local side such as a local remote controller.
This variable is output by the nciInitStartTm (Initialize Start Time) at the powering of LM ADAPTER.

Update Rate

The value defined by nciSndHrtBt_1 (Send Heartbeat_1) is valid.

Default Service Type

Acknowledged

NOTE:
1: It is necessary to make all the indoor units in the same refrigerant system into the same operation mode depending on a model. "HVAC_NUL" may be outputted when it is set as different operation mode.
2: Depending on the change timing, "HVAC_NUL" may be outputted temporarily.

5n Setpoint

network input SNVT_temp_p nviSetPoint_n;

This input network variable is used to change the temperature setpoint of the indoor unit.

Valid Range

HVAC Mode	Range
Auto mode	19℃ to 28℃
Heat mode	17℃ to 28℃
Cool mode	19℃ to 30℃
Dry mode	19℃ to 30℃
Fan mode	Not available

Unit of set temperature : 1.0℃

＊Be careful that the range of set temperature may differ depending on the model of the indoor and outdoor units.

Default Value

The default value is determined by the state of the air conditioner（indoor unit).

This variable becomes value = 0 until the value is updated after the power supply of LM ADAPTER.

6n Setpoint state

network output SNVT_temp_p nvoSetPoint_n;

This output network variable indicates the present temperature setpoint of the indoor unit.

Valid Range

Output range：17 to 30 ℃

Temperature unit：1.0 ℃

*The value is 0 while LM ADAPTER is initialized.

When Transmitted

This variable is transmitted promptly as the state changes.

This variable is also transmitted as the state changes by the operation from the local side such as a local remote controller.

This variable is output by the nciInitStartTm (Initialize Start Time) at the powering of LM ADAPTER.

Update Rate

The value defined by nciSndHrtBt__1(SendHearbeat_1) is valid.

Default Service Type

Acknowledged

7n Request LOSSNAY Mode

network input SNVT_switch nviLCMode_n;

This input network variable is used to change the operation mode of the ventilator (at independent operation without interlocking) .
This nv is not required to be use when setting the operation mode only from the local side such as a local remote controller.

Valid Range

LOSSNAY Mode	SW1-7 : OFF		SW1-7 : ON	
	state	value	state	value
Interchange	0	0	0	not used
			1 (*1)	0
Automatic	1	not used	1 (*1)	0.5% to 50%
	else	not used		
Normal	0	0.5% to 100% (*2)	1 (*1)	50.5% to 100% (*2)

*1:The setting to state=0x02-0xFE is interpreted as state=0x01.
The setting to state=0xFF is invalid.
*2:The setting to over 100% is interpreted as 100%.

Default Value

The default value is determined by the state of the ventilator.
This variable becomes value = 0 until the value is updated after the power supply of LM ADAPTER.

8n LOSSNAY Mode state

network output SNVT_switch nvoLCMode_n;

This output network variable indicates the present operation mode of the ventilator.

Valid Range

LOSSNAY Mode	SW1-7 : OFF		SW1-7 : ON	
	state	value	state	value
Interchange	0	0	0	0
Automatic	1	0	1	50%
Normal	0	100%	1	100%

＊The value is 0 while LM ADAPTER is initialized.

When Transmitted

This variable is transmitted promptly as the state changes.
It is also transmitted as the state changes by the operation from the local side such as a local remote controller.

Update Rate

The value defined by nciSndHrtBt_1 (Send Heartbeat_1) and nciMinOutTm (Minimum Send Time) is valid.

Default Service Type

Acknowledged

9n Request Fan Speed

network input SNVT_switch nviFanSpeed_n;

This input network variable is used to change the fan speed of the indoor unit or Ventilator (in case of independent operation).

Valid Range

Fan Speed	SW1-7 : OFF		SW1-7 : ON	
	state	value	state	value
Low	not used	0% to 25%	0	not used
			1 (*1)	0
Mid-2	not used	25.5% to 50%	1 (*1)	0.5% to 50%
Mid-1	not used	50.5% to 75%	1 (*1)	50.5% to 75%
High	not used	75.5% to 100% (*2)	1 (*1)	75.5% to 100% (*2)

*1:The setting to state=0x02-0xFE is interpreted as state=0x01.
The setting to state=0xFF is invalid.
*2:The setting to over 100% is interpreted as 100%.

* As the number of steps in fan speed differs depending on the model of the indoor unit.
Each indoor unit runs as follows. The data received is retained continually.
3-step model : Mid-2 is accepted as Mid-1.
2-step model : Mid-2 and Mid-1 are accepted as Low.
1-step model : Low, Mid-2 and Mid-1 are accepted as High.

Default Value

The default value is determined by the state of the air conditioner（indoor unit).
This variable becomes value = 0 until the value is updated after the power supply of LM ADAPTER.

10n Fan Speed state

network output SNVT_switch nvoFanSpeed_n;

This output network variable indicates the present airflow rate of the indoor unit fan.

Valid Range

Fan Speed	SW1-7 : OFF		SW1-7 : ON	
	state	value	state	value
Low	0	25%	0	0
Mid-2	0	50%	1	50%
Mid-1	0	75%	1	75%
High	0	100%	1	100%

*The value is 0 while LM ADAPTER is initialized.

When Transmitted

This variable is transmitted promptly as the state changes.
It is also transmitted as the state changes by the operation from the local side such as a local remote controller.

Update Rate

The value defined by nciSndHrtBt_1(SendHearbeat_1) is valid.

Default Service Type

Acknowledged

11n Request Local Prohibit On/Off

network input SNVT_switch nviProOnOff_n;

This input network variable is used to prohibit the On/Off operation of the local remote controller connected to the indoor unit or ventilator (under independent operation without interlocking).
When the ventilator is registered to be interlocked with the indoor unit, the On/Off operation of the ventilator will also be prohibited.
Instructions according to this network variable in under the prohibition of collective operation (nvoAllPro outputs "Enable") are held.
The operation prohibit setting will be cancelled when the time set with nciRcvHrtBt_1 (Receive Heartbeat 1) elapses , so periodic updating is required.

Valid Range

Prohibit/Permit	SW1-7 : OFF		SW1-7 : ON	
	state	value	state	value
Permit	0	not used	0	not used
	else	not used	1 (*1)	0
Prohibit	1	not used	1 (*1)	0.5% to 100% (*2)

*1:The setting to state=0x02-0xFE is interpreted as state=0x01.
The setting to state=0xFF is invalid.
*2:The setting to over 100% is interpreted as 100%.

Default Value

The default value permit On/Off operation of local remote controller
This variable becomes value = 0 until the value is updated after the power supply of LM ADAPTER.

NOTE:
1: For the use of this function, turn ON the switch (SW1-1) on LM ADAPTER.(Factory setting "OFF")
2: It is possible to use with an "MA" remote controller.

12n Local Prohibit On/Off state

network output SNVT_switch nvoProOnOff_n;

This output network variable indicates the prohibit/permit state for the On/Off of the local remote controller connected to the indoor unit or ventilator.

Valid Range

Prohibit/Permit	SW1-7 : OFF		SW1-7 : ON	
	state	value	state	value
Permit	0	0	0	0
Prohibit	1	0	1	100%

*The value is 0 while LM ADAPTER is initialized.

When Transmitted

This variable is transmitted promptly as the state changes.

Update Rate

The maximum update rate is not available.

Default Service Type

Acknowledged

NOTE:
1: For the use of this function, turn ON the switch (SW1-1) on LM ADAPTER.(Factory setting "OFF")
2: It is possible to use with an "MA" remote controller.

13n Request Local Prohibit Mode

network input SNVT_switch nviProMode_n;

This input network variable is used to prohibit the mode change operation of the local remote controller connected to the indoor unit.
Instructions according to this network variable in under the prohibition of collective operation (nvoAllPro outputs "Enable") are held.
The operation prohibit setting will be cancelled when the time set with nciRcvHrtBt_1 (Receive Heartbeat 1) elapses , so periodic updating is required.

Valid Range

Prohibit/Permit	SW1-7 : OFF		SW1-7 : ON	
	state	value	state	value
Permit	0	not used	0	not used
	else	not used	1 (*1)	0
Prohibit	1	not used	1 (*1)	0.5% to 100% (*2)

*1:The setting to state=0x02-0xFE is interpreted as state=0x01.
The setting to state=0xFF is invalid.
*2:The setting to over 100% is interpreted as 100%.

Default Value

The default value permit mode change operation of local remote controller.
This variable becomes value = 0 until the value is updated after the power supply of LM ADAPTER.

NOTE:
1: For the use of this function, turn ON the switch (SW1-1) on LM ADAPTER.(Factory setting "OFF")
2: It is possible to use with an "MA" remote controller.

14n Local Prohibit Mode state

network output SNVT_switch nvoProMode_n;

This output network variable indicates the prohibit/permit state of the On/Off operation of the local remote controller connected to the ventilator.

Valid Range

Prohibit/Permit	SW1-7 : OFF		SW1-7 : ON	
	state	value	state	value
Permit	0	0	0	0
Prohibit	1	0	1	100%

*The value is 0 while LM ADAPTER is initialized.

When Transmitted

This variable is transmitted promptly as the state changes.

Update Rate

The maximum update rate is not available.

Default Service Type

Acknowledged

NOTE:
1: For the use of this function, turn ON the switch (SW1-1) on LM ADAPTER.(Factory setting "OFF")
2: It is possible to use with an "MA" remote controller.

15n Request Local Prohibit SetPoint

network input SNVT_switch nviProSetP_n;

This input network variable is used to prohibit the temperature setpoint change of the local remote controller connected to the indoor unit.
Instructions according to this network variable in under the prohibition of collective operation (nvoAllPro outputs "Enable") are held.
The operation prohibit setting will be cancelled when the time set with nciRcvHrtBt_1 (Receive Heartbeat 1) elapses , so periodic updating is required.

Valid Range

Prohibit/Permit	SW1-7 : OFF		SW1-7 : ON	
	state	value	state	value
Permit	0	not used	0	not used
	else	not used	1 (*1)	0
Prohibit	1	not used	1 (*1)	0.5% to 100% (*2)

*1:The setting to state=0x02-0xFE is interpreted as state=0x01.
The setting to state=0xFF is invalid.
*2:The setting to over 100% is interpreted as 100%.

Default Value

The default value permit temperature setpoint change for local remote controller.
This variable becomes value = 0 until the value is updated after the power supply of LM ADAPTER.

NOTE:
1: For the use of this function, turn ON the switch (SW1-1) on LM ADAPTER.(Factory setting "OFF")
2: It is possible to use with an "MA" remote controller.

16n Local Prohibit SetPoint state

network output SNVT_switch nvoProSetP_n;

This output network variable indicates the prohibit/permit of the temperature setting for the local remote controller connected to the indoor unit or ventilator.

Valid Range

Prohibit/Permit	SW1-7 : OFF		SW1-7 : ON	
	state	value	state	value
Permit	0	0	0	0
Prohibit	1	0	1	100%

*The value is 0 while LM ADAPTER is initialized.

When Transmitted

This variable is transmitted promptly as the state changes.

Update Rate

The maximum update rate is not available.

Default Service Type

Acknowledged

NOTE:
1: For the use of this function, turn ON the switch (SW1-1) on LM ADAPTER.(Factory setting "OFF")
2: It is possible to use with an "MA" remote controller.

17n Request Forced Thermostat OFF

network input SNVT_switch nviThermoOff_n;

This input network variable is used to forcibly change indoor unit to the thermo OFF state (Fan mode).
The forced thermo OFF setting will be cancelled when the time set with nciRcvHrtBt_2 (Receive Heartbeat 2) elapses, so periodic updating is required.

Valid Range

Thermostat OFF	SW1-7 : OFF		SW1-7 : ON	
	state	value (*1)	state	value
disable	0	1% to 100% (*3)	0	not used
	else	1% to 100% (*3)	1 (*2)	0
enable	0	0% to 0.5%	1 (*2)	0.5% to 100% (*3)
	else	0% to 0.5%		
	1	not used		

*1:The value field is set in 100% usually.
*2:The setting to state=0x02-0xFE is interpreted as state=0x01.
The setting to state=0xFF is invalid.
*3:The setting to over 100% is interpreted as 100%.

Default Value

The default value is determined by the state of the air conditioner (indoor unit).
This variable becomes value = 0 until the value is updated after the power supply of LM ADAPTER.

18n Forced Thermostat OFF state

network output SNVT_switch nvoThermoOff_n;

This output network variable indicates the current forced thermo OFF state of the indoor unit.

Valid Range

Thermostat OFF	SW1-7 : OFF		SW1-7 : ON	
	state	value	state	value
disable	0	0	0	0
enable	1	0	1	100%

*The value is 0 while LM ADAPTER is initialized.

When Transmitted

This variable is transmitted promptly as the state changes.
It is also transmitted as the state changes by the operation from the local side such as a local remote controller.

Update Rate

The maximum update rate is not available.

Default Service Type

Acknowledged

19n Filter Sign Reset

network input SNVT_switch nviFiltReset_n;

This input network variable resets the run time and filter sign for the indoor unit or ventilator (during independent non-interlocked operation).

Valid Range

	SW1-7 : OFF		SW1-7 : ON	
	state	value	state	value
Reset	1	not used	1(*1)	0.5% to 100% (*2)

*1:The setting to state=0x02-0xFE is interpreted as state=0x01.
The setting to state=0xFF is invalid.
*2:The setting to over 100% is interpreted as 100%.

*The value is 0 while LM ADAPTER is initialized.
*This operation is not carried out when there are inputs other than the above.

Default Value

This variable becomes value = 0 until the value is updated after the power supply of LM ADAPTER.

20n Filter Run Time

network output SNVT_time_hour nvoOnTime_n;

This output network variable indicates the filter operation time for the indoor unit or ventilator (during independent non-interlocked operation).

Valid Range

0～65,534 hour

*The value is 0 while LM ADAPTER is initialized.

*The valid range will differ according to the indoor unit or ventilator model.

When Transmitted

This variable is transmitted promptly as the state changes.

Update Rate

The maximum update rate is not available.

Default Service Type

Acknowledged

NOTE: For the use of this function, turn ON the switch (SW1-4) on LM ADAPTER.(Factory setting "OFF")

21n **Space Temperature**

network output SNVT_temp_p nvoSpaceTemp_n;

This output network variable indicates the state of the indoor temperature.

Valid Range

Output range ： -10 ～ 50℃
Temperature unit： 0.1℃
*The value is 0 while LM ADAPTER is initialized.

When Transmitted

This variable is transmitted when the indoor temperature changes by more than 1℃. (However , it will not be transmitted for changes within 10 minutes.)
This variable is output when the state change is more than the change width set in nciAnalogWidth (indoor temperature change width setting). (Note that changes within 10 minutes will not be output.)
*To obtain the output within 10 minutes, please refer to the nciSndHrtBt_2 (Send Heartbeat_2) and the nciAnlgMonTm(Monitoring Time).

Update Rate

The value designated by nciSndHrtBt_2 (Send Heartbeat_2) and nciMinOutTm (Minimum Send Time) is valid.

Default Service Type

Acknowledged

NOTE:
1: Indoor temperature is outputted while an indoor unit stops. However,please usually use it for temperature measurement only during operation. It may not become a normal value while a fan stops.
2: The display of local remote controller will be 1.0℃(below a decimal point round off) unit.

22n Alarm state

network output SNVT_switch nvoAlarm_n;

This output network variable indicates the abnormality of the indoor unit.
If an error occurs in an outdoor unit, the indoor unit will also stop with an error. Thus, the error will be output from all indoor units in the same refrigerant system. (However indoor units under stopping are excluded.)

Valid Range

Unit state	SW1-7 : OFF		SW1-7 : ON	
	state	value	state	value
normal	0	0	0	0
alarm	1	0	1	100%

*The value is 0 while LM ADAPTER is initialized.

When Transmitted

This variable is transmitted promptly as the state changes.
This variable is also transmitted as the state changes by the operation from the local side such as a local remote controller.
This variable is output by the nciInitStartTm (Initialize Start Time) at the powering of LM-AP.

Update Rate

The maximum update rate is not available.

Default Service Type

Acknowledged

NOTE:

1: The release of the indoor unit nvoAlarm_n(Alarm State) results in the "Off" command of the nviOnOff_n (Request On/Off). For the nvoAlarm_n (Alarm State) when the indoor unit is under stopping, transmit "Off",after transmitting "On".
2: The error is not output when the indoor unit is stopped, so always use together with the local remote controller or system controller.

23n Error Code

network output SNVT_count nvoErrCode_n;

This output network variable indicates the indoor unit's error code.
If an error occurs in an outdoor unit, the indoor unit will also stop with an error. Thus, the error will be output from all indoor units in the same refrigerant system. (However indoor units under stopping are excluded.)

Valid Range

0～7999 = Error Code
65,535 = Normal
*The value is 0 while LM ADAPTER is initialized.

When Transmitted

This variable is transmitted promptly as the state changes.
This variable is also transmitted as the state changes by the operation from the local side such as a local remote controller.
This variable is output by the nciInitStartTm (Initialize Start Time) at the powering of LM ADAPTER.

Update Rate

The maximum update rate is not available.

Default Service Type

Acknowledged

NOTE:

1: The release of the indoor unit nvoErrCode_n(Error Code) results in the "Off" command of the nviOnOff_n(Request On/Off) For the nvoErrCode_n(Error Code) when the indoor unit is under stopping, transmit "Off" ,after transmitting "On".
2: The error is not output when the indoor unit is stopped, so always use together with the local remote controller or system controller.

24n Error Unit Address

network output SNVT_count nvoErrAdrs_n;

This output network variable indicates the indoor unit's address.
If an error occurs in an outdoor unit, the indoor unit will also stop with an error. Thus, the error will be output from all indoor units in the same refrigerant system. (However indoor units under stopping are excluded.)

Valid Range

0～255 = Error Unit Address

65,535 = Normal

*The value is 0 while LM ADAPTER is initialized.

When Transmitted

This variable is transmitted promptly as the state changes.
This variable is also transmitted as the state changes by the operation from the local side such as a local remote controller.
This variable is output by the ncilnitStartTm (Initialize Start Time) at the powering of LM ADAPTER.

Update Rate

The maximum update rate is not available.

Default Service Type

Acknowledged

NOTE:

1: The release of the indoor unit nvoErrAdrs_n(Error Unit Address) results in the "Off" command of the nviOnOff_n (Request On/Off).
For the nvoErrAdrs_n(Error Unit Address) when the indoor unit is under stopping, transmit "Off",after transmitting "On".

2: The error is not output when the indoor unit is stopped, so always use together with the local remote controller or system controller.

26n **Thermo On/Off state_1**

network output SNVT_state nvoThermo_n;

This output network variable indicates the On/Off state of the indoor unit , the thermostat and the auxiliary heater for heating.
This variable is used to calculate the electric charge.

Valid Range

bit[2]	bit[1]	bit[0]	status
—	—	0	Indoor OFF
—	—	1	Indoor ON
—	0	—	Indoor thermostat OFF
—	1	—	Indoor thermostat ON
0	—	—	Supplementary heater OFF
1	—	—	Supplementary heater ON

*The value is 0 while LM ADAPTER is initialized.

When Transmitted

This variable is transmitted promptly when the state changes.
This variable is output by the nciInitStartTm (Initialize Start Time) at the powering of LM ADAPTER.

Update Rate

The value designated by nciMinOutTm (Minimum Send Time) is valid.

Default Service Type

Acknowledged

NOTE: This output value is not the addition value or proportional division value of electric charge.
This variable outputs a value now. It is necessary to perform addition and proportional division based on this output value.

26n **Thermo On/Off state 2**

network output SNVT_switch nvoThermo_n;

This output network variable indicates the On/Off state of the indoor unit.
This variable is used to calculate the electric charge.

Valid Range

Thermostat State	SW1-7 : OFF		SW1-7 : ON	
	state	value	state	value
Indoor thermostat OFF	0	0	0	0
Indoor thermostat ON	1	0	1	100%

*The value is 0 while LM ADAPTER is initialized.

When Transmitted

This variable is transmitted promptly when the state changes.
This variable is output by the nciInitStartTm (Initialize Start Time) at the powering of LM ADAPTER.

Update Rate

The value designated by nciMinOutTm (Minimum Send Time) is valid.

Default Service Type

Acknowledged

NOTE: This output value is not the addition value or proportional division value of electric charge.
This variable outputs a value now. It is necessary to perform addition and proportional division based on this output value.

28n **Model Code**

network output SNVT_count nvoIcMdlSize_n;

This output network variable indicates the model code that indicates the indoor unit.
This variable is used to calculate the electric charge.

Valid Range

0～65,534

*The value is 0 while LM ADAPTER is initialized.

When Transmitted

This variable is transmitted promptly when the state changes.
Monitoring with a Poll request or Fetch request is required.

Update Rate

The maximum update rate is not available.

Default Service Type

Acknowledged

29n Group number

network output SNVT_count nvoGroupNo_n;

This output network variable indicates the group number of the indoor unit.

Valid Range

0～50

*The value is 0 while LM ADAPTER is initialized.

When Transmitted

This variable is transmitted promptly when the state changes.
Monitoring with a Poll request or Fetch request is required.

Update Rate

The maximum update rate is not available.

Default Service Type

Acknowledged

NOTE: The group number set up by the system controller is outputted.

1 Request All Off

network input SNVT_switch nviAllOff;

This input network variable is used for the emergency Off of the indoor unit and all ventilation.
Under the output of "Emergency OFF" of nvoAllOff cannot operate from other remote controller ,system controller.
The ON/OFF input for each indoor unit from the master system will be ignored. The emergency stop valid time is set with nciEffectTm_1 (Effective time 1).
The indoor unit will not start even if the emergency stop is cancelled.

Valid Range

	SW1-7 : OFF		SW1-7 : ON	
	state	value	state	value
emergency OFF	0	not used	0	not used
			1 (*1)	0

*1:The setting to state=0x02-0xFE is interpreted as state=0x01.
The setting to state=0xFF is invalid.

*This operation is not carried out when there are inputs other than the above.
The present instruction state is continued.

Default Value

This variable become state=0 and value = 0 until the value is updated after the power supply of LM ADAPTER.

NOTE: Input the "On" command with nviOnOff (Request ON/OFF) to start the indoor unit after emergency stop is cancelled.

3 Emergency state

network output SNVT_switch nvoAllOff;

This output network variable indicates the emergency stop validity state.

Valid Range

Emergency state	SW1-7 : OFF		SW1-7 : ON	
	state	value	state	value
normal	0	0	0	0
Emergency OFF	1	0	1	100%

*The value is 0 while LM ADAPTER is initialized.

When Transmitted

This variable is transmitted promptly when the state changes.
This variable is output by the nciInitStartTm (Initialize Start Time) at the powering of LM ADAPTER.

Update Rate

This network variable is outputted every 10 minutes.

Default Service Type

Acknowledged

2 Collective On/Off state

network output SNVT_switch nvoAllOnOff;

This output network variable collectively indicates the current On/Off state of the indoor units or ventilators (during independent non-interlocked operation).

Valid Range

Collective Unit state	SW1-7 : OFF		SW1-7 : ON	
	state	value	state	value
All Off	0	0% to 100%	0	0
One or more sets are ON or in test run	1	0% to 100%	1	100%

*The value is 0 while LM ADAPTER is initialized.

When Transmitted

This variable is transmitted promptly when the state changes.
It is also transmitted as the state changes by the operation from the local side such as a local remote controller.
This variable is output by the nciInitStartTm (Initialize Start Time) at the powering of LM ADAPTER.

Update Rate

The maximum update rate is not available.

Default Service Type

Acknowledged

4 Request Collective Operation Prohibit

network input SNVT_switch nviAllPro;

This input network variable is used to collectively prohibit (On/Off, operation mode, temperature setting operations) of the local remote controller connected to the indoor unit or ventilator (during independent non-interlocked operation). Instructions according to nviProOnOff_n,nviProMode_n,and nviProSetP_n, in under the prohibition of collective operation (nvoAllPro outputs "Enable") are held.
The effective time is set according to nviEffectTm_2(Effective Time_2).

Valid Range

Collective Operation Prohibit	SW1-7 : OFF		SW1-7 : ON	
	state	value	state	value
Enable	1	not used	1 (*1)	0.5% to 100% (*2)

*1:The setting to state=0x02-0xFE is interpreted as state=0x01.
The setting to state=0xFF is invalid.
*2:The setting to over 100% is interpreted as 100%.
*This operation is not carried out when there are inputs other than the above.
The present instruction state is continued.

Default Value

This variable become state=0 and value = 0 until the value is updated after the power supply of LM ADAPTER.

NOTE:
1: For the use of this function, turn ON the switch (SW1-1) on LM ADAPTER.(Factory setting "OFF")
2: It is possible to use with an "MA" remote controller.

5 Collective Local Prohibit state

network output SNVT_switch nvoAllPro;

This output network variable indicates the state of collective operation prohibiting.

Valid Range

Collective Local Prohibit	SW1-7 : OFF		SW1-7 : ON	
	state	value	state	value
disable	0	0	0	0
enable	1	0	1	100%

*The value is 0 while LM ADAPTER is initialized.

When Transmitted

This variable is transmitted promptly when the state changes.

Update Rate

The maximum update rate is not available.

Default Service Type

Acknowledged

NOTE:
1: For the use of this function, turn ON the switch (SW1-1) on LM ADAPTER.(Factory setting "OFF")
2: It is possible to use with an "MA" remote controller.

6 Collective Alarm for Indoor Unit

network output SNVT_switch nvoAllAlarm;

This output network variable collectively outputs the presence of indoor unit errors(nvoAlarm_n).
Abnormalities will be output if the number of the indoor units in unusual is included.

Valid Range

	SW1-7 : OFF		SW1-7 : ON	
	state	value	state	value
normal	0	0	0	0
Error	1	0	1	100%

*The value is 0 while LM ADAPTER is initialized.

When Transmitted

This variable is transmitted promptly when the state changes.
This variable is output by the ncilnitStartTm (Initialize Start Time) at the powering of LM ADAPTER.

Update Rate

The maximum update rate is not available.

Default Service Type

Acknowledged

7 Collective Alarm for LM ADAPTER

network output SNVT_switch nvoAllAlarmLMAP;

This output network variable collectively outputs the presence of communication errors between the LM ADAPTER and indoor unit.
If the number of the indoor units in communication is unusual, the abnormalities in communication will be output.

Valid Range

LM ADAPTER state	SW1-7 : OFF		SW1-7 : ON	
	state	value	state	value
Normal	0	0	0	0
communication Error	1	0	1	100%

*The value is 0 while LM ADAPTER is initialized.

When Transmitted

This variable is transmitted promptly when the state changes.
This variable is output by the ncilnitStartTm (Initialize Start Time) at the powering of LM-AP.

Update Rate

The maximum update rate is not available.

Default Service Type

Acknowledged

NOTE: The communication error are caused with the power supply OFF of an outdoor unit etc.
With the power supply OFF of an indoor unit, communication does not become unusual.

9 Collective Defrosting State

network output SNVT_switch nvoDefrost;

This network variable indicated the defrosting state (collective) of indoor unit and outdoor unit.

Valid Range

unit state	SW1-7 : OFF		SW1-7 : ON	
	state	value	state	value
Normal	0	0	0	0
defrosting	1	0	1	100%

*The value is 0 while LM ADAPTER is initialized.

When Transmitted

This variable is transmitted promptly when the state changes.

Update Rate

The maximum update rate is not available.

Default Service Type

Acknowledged

12 Time Stamp

network input SNVT_time_stamp nviRmTime;

This input network variable sets the local remote controller's time.
The time is collectively set for all remote controllers (for which the time can be set) connected to M-NET.

Valid Range

year	not used（0:constantly）
month	not used（0:constantly）
day	not used（0:constantly）
hour	0 to 23
minute	0 to 59
second	0 to 59

Default Value

The value is 0 while LM ADAPTER is initialized.

NOTE: The time is reset when the local remote controller's power is turned OFF, so the time must be set periodically.

13 Request Limit Temperature Setting Range

network input SNVT_switch nviRmLim;

This input network variable changes the local remote controller's temperature setting range.
The set temperature range is set with nciCoolLrSetP (cool/dry lower limit value setting), and nciHeatUpSetP (Upper Setpoint Heating).
The displayed details are set with nciRmDsp_1 (Local Display 1) and nciRmDsp_2 (Local Display 2).

Valid Range

Change of the setting Range	SW1-7 : OFF		SW1-7 : ON	
	state	value	state	value
disable	0	not used	0	not used
	else	not used	1 (*1)	0
enable	1	not used	1 (*1)	0.5% to 100% (*2)

*1:The setting to state=0x02-0xFE is interpreted as state=0x01.
The setting to state=0xFF is invalid.
*2:The setting to over 100% is interpreted as 100%.

* The details displayed on the local remote controller will be set at each update regardless of the "state field" value.

Default Value

A default value is determined by the setting value of local remote controller.
This variable become state=0 and value = 0 until the value is updated after the power supply of LM ADAPTER.

NOTE:
1: It is possible to use with an "MA" remote controller.
2: The range is set collectively for all remote controllers (for which range can be set) connected to M-NET.

14 Request Simplified Locking

network input SNVT_switch nviRmLck;

This input network variable sets the simple lock for the local remote controller operations.
The simple lock range is set with nciRmOpLck (Local Operation Lock).
The displayed details are set with nciRmDsp_1 (Local Display 1) and nciRmDsp_2 (Local Display 2).
The simple lock is set collectively for all remote controllers (for which simple lock can be set) connected to M-NET.

Valid Range

Change of the Simplified Locking	SW1-7 : OFF		SW1-7 : ON	
	state	value	state	value
disable	0	not used	0	not used
	else	not used	1 (*1)	0
enable	1	not used	1 (*1)	0.5% to 100% (*2)

*1:The setting to state=0x02-0xFE is interpreted as state=0x01.
The setting to state=0xFF is invalid.
*2:The setting to over 100% is interpreted as 100%.

* The details displayed on the local remote controller will be set at each update regardless of the "state field" value.

Default Value

A default value is determined by the setting value of local remote controller.
This variable become state=0 and value = 0 until the value is updated after the power supply of LM ADAPTER.

NOTE:
1: It is possible to use with an "MA" remote controller.
2: The range is set collectively for all remote controllers (for which range can be set) connected to M-NET.

5.Configuration Properties

15 Minimum Send Time

network input config SNVT_time_sec nciMinOutTm;

This configuration property defines the minimum send time between the output network variables.
The objective network variables are given below.

Transmitting time is secured per indoor unit.
- ・nvoOnOff_n（On/Off run state）
- ・nvoMode_n（Mode state）
- ・nvoSetP_n（SetPoint state）
- ・nvoLCMode_n（LOSSNAY Mode state）
- ・nvoFanSpeed_n（FanSpeed state）
- ・nvoProOnOff_n（Local Prohibit On/Off state）
- ・nvoProMode_n（Local Prohibit Mode state）
- ・nvoProSetP_n（Local Prohibit SetPoint state）
- ・nvoThermoOff_n（Forced Thermostat OFF state）
- ・nvoOnTime_n（Filter Run Time）
- ・nvoSpaceTemp_n（Space Temperature）
- ・nvoAlarm_n（Alarm state）
- ・nvoErrCode_n（Error Code）
- ・nvoErrAdrs_n（Error Unit Address）
- ・nvoThermoSt_n（Thermo On/Off state_1）
- ・nvoThermo_n（Thermo On/Off state_2）

Transmitting time is secured per indoor unit.
- ・nvoAllOnOff（Collective On/Off state）
- ・nvoAllOff（Emergency state）
- ・nvoAllPro（Collective Local Prohibit state）
- ・nvoDefrost（Collective Defrosting state）
- ・nvoAllAlarm（Collective Alarm for Indoor Unit）
- ・nvoAllAlarmLMAP（Collective Alarm for LM ADAPTER）

Valid Range

The valid range covers from 1.0 to 600.0 seconds (per 1 second).
The setting to 0.0 or 6553.5 seconds makes the minimum send time setting invalid.
The setting to 0.1 - 0.9 seconds results in 1.0 second.
The setting to 600.1 - 6553.4 seconds results in 600.0 seconds.

Default Value

6553.5 seconds (Setting invalid)

16 Send Heartbeat Start Time

network input config SNVT_time_sec nciStartHrtBt

This configuration property defines the start time of automatic updating at the powering of the LM ADAPTER.
The objective configuration properties are given below.
・nciSndHrtBt_1（Send Heartbeat_1）
・nciSndHrtBt_2（Send Heartrbeat_2）

Valid Range

The valid range covers from 1200.0 to 6540.0 seconds (per 60 seconds).
The setting to 0.0 or 6553.5 seconds results in 1800.0 seconds.
The setting to 0.1 - 1199.9 seconds results in 1200.0 seconds.
The setting to 6540.1- 6553.4 seconds results in 6540.0 seconds.

Default Value

6553.5 seconds (judged as 1800 seconds)

17 Send Start Time

network input config SNVT_time_sec nciStartOutTm

This configuration property defines the start time of the output network variable change at powering of LM ADAPTER.
The objective network variables are given below.
・nvoOnOff_n（On/Off run state）
・nvoMode_n（Mode state）
・nvoSetP_n（SetPoint state）
・nvoLCMode_n（LOSSNAY Mode state）
・nvoFanSpeed_n（Fanspeed state）
・nvoProOnOff_n（Local Prohibit On/Off state）
・nvoProMode_n（Local Prohibit Mode state）
・nvoProSetP_n（Local Prohibit SetPoint state）
・nvoThermoOff_n（Forced Thermostat OFF state）
・nvoOnTime_n（Filter Run Time）
・nvoSpaceTemp_n（Space Temperature）
・nvoAlarm_n（Alarm state）
・nvoErrCode_n（Error Code）
・nvoErrAdrs_n（Error Unit Address）
・nvoThermoSt_n（Thermo On/Off state_1）
・nvoThermo_n（Thermo On/Off state_2）
・nvoAllOnOff（Collective On/Off state）
・nvoAllOff（Emergency state）
・nvoAllPro（Collective local prohibit state）
・nvoDefrost（Collective Defrosting state）
・nvoAllAlarm(Collective Alarm for Indoor Unit)
・nvoAllAlarmLMAP(Collective Alarm for LM ADAPTER)

Valid Range

The valid range covers from 1200.0 to 6540.0 seconds (per 60 seconds).
The setting to 0.0 or 6553.5 seconds results in 1800.0 seconds.
The setting to 0.1 - 1199.9 seconds results in 1200.0 seconds.
The setting to 6540.1 ～ 6553.4 seconds results in 6540.0 seconds.
Output data is as follows by setup of Variable A and Variable B.

Default Value

6553.5 seconds (judged as 1800 seconds)

NOTE: Output data is as follows by setup "Initialize Start Time" and "Communication Timing".
Setting "Initialize":
An initial output value or a value at a power supply ON to the time of 20-minute progress.
Setting "setting time":
An initial output value or a value at the time of Neuron Chip communication start.

18 Initialize Start Time

network input config SNVT_time_sec nciInitStartTm

This configuration property defines the time to start the output when the output network variables change at LM ADAPTER power ON.
The objective network variables are given below.
- nvoOnOff_n（On/Off run state）
- nvoMode_n（Mode state）
- nvoSetP_n（SetPoint state）
- nvoAlarm_n（Alarm state）
- nvoErrCode_n（Error Code）
- nvoErrAdrs_n（Error Unit Address）
- nvoThermoSt_n（Thermo On/Off state_1）
- nvoThermo_n（Thermo On/Off state_2）
- nvoAllOnOff（Collective On/Off state）
- nvoAllOff（Emergency state）
- nvoAllAlarm(Collective Alarm for Indoor Unit)
- nvoAllAlarmLMAP(Collective Alarm for LM ADAPTER)

Valid Range

The valid range covers from 0.0,1200.0 to 3600.0 seconds (per 60 seconds).
The setting to 0.0 or 6553.5 seconds makes the initial output time setting invalid.
The setting to 0.1 - 1199.9 seconds results in 1200.0 seconds.
The setting to 3600.1 ～ 6553.4 seconds results in 3600.0 seconds.

Default Value

6553.5 seconds (Setting invalid)

19 Initialize Send Time_1

network input config SNVT_time_sec nciInitOutTm_1

This configuration property defines the minimum send time between the output network variables at initial output.
This configuration is valid when setting the Initialize Start Time to other values than 0.0 second.
The objective network variables are given below.
- nvoOnOff_n（On/Off run state）
- nvoMode_n（Mode state）
- nvoSetP_n（SetPoint state）
- nvoAlarm_n（Alarm state）
- nvoErrCode_n（Error Code）
- nvoErrAdrs_n（Error Unit Address）
- nvoThermoSt_n（Thermo On/Off state_1）
- nvoThermo_n（Thermo On/Off state_2）
- nvoAllOnOff（Collective On/Off state）
- nvoAllOff（Emergency state）
- nvoAllAlarm(Collective Alarm for Indoor Unit)
- nvoAllAlarmLMAP(Collective Alarm for LM ADAPTER)

Valid Range

The valid range covers from 0.1 to 1.0 second (per 100m seconds).
The setting to 0.0 or 6553.5 seconds makes the initial output minimum send time setting invalid.
The setting to 1.1 - 6553.4 seconds results in 1.0 second.

Default Value

6553.5 seconds (Setting invalid)

20 Initialize Send Time_2

network input config SNVT_time_sec nciInitOutTm_2

This configuration property defines the minimum send time between each unit of the indoor, Mr.SLIM and ventilator at the initial output.
This configuration is valid when setting the Initialize Start Time to other values than 0.0 second.
The objective network variables are given below.
- nvoOnOff_n（On/Off run state）
- nvoMode_n（Mode state）
- nvoSetP_n（SetPoint state）
- nvoAlarm_n（Alarm state）
- nvoErrCode_n（Error Code）
- nvoErrAdrs_n（Error Unit Address）
- nvoThermoSt_n（Thermo On/Off state_1）
- nvoThermo_n（Thermo On/Off state_2）
- nvoAllOnOff（Collective On/Off state）
- nvoAllOff（Emergency state）
- nvoAllAlarm(Collective Alarm for Indoor Unit)
- nvoAllAlarmLMAP(Collective Alarm for LM ADAPTER)

Valid Range

The valid range covers from 5.0 to 50.0 second (per 1second).
The setting to 0.0 or 6553.5 seconds makes the initial output minimum send time setting invalid.
The setting to 0.1 - 4.9 seconds results in 5.0 seconds.
The setting to 50.1 - 6553.4 seconds results in 50.0 seconds.

Default Value

6553.5 seconds (Setting invalid)

21 Send Heartbeat_1

network input config SNVT_time_sec nciSndHrtBt_1;

This configuration property defines the time between the previous and next updating.
When the set time is elapsed from the automatic update or change output of the previous nvoOnOff_n (On/Off Run State), automatic updating will be commenced.
The objective variables are given below.
- ･nvoOnOff_n（On/Off run state）
- ･nvoMode_n（Mode state）
- ･nvoSetP_n（SetPoint state）
- ･nvoLCMode_n（LOSSNAY Mode state）
- ･nvoFanSpeed_n（Fanspeed state）

Valid Range

The valid range covers from 600.0 to 6540.0 seconds (per 60 seconds).
The setting to 0.0 or 6553.5 seconds makes the automatic updating invalid.
The setting to 0.1 - 599.9 seconds results in 600.0seconds.
The setting to 6540.1 - 6553.4 seconds results in 6540.0 seconds.

Default Value

6553.5 seconds（without automatic update)

22 Send Heartbeat_2

network input config SNVT_time_sec nciSndHrtBt_2;

This configuration property defines the time between the previous and next updating.
When the set time is elapsed from the previous updating, automatic updating will be commenced.
The objective variable is given below.
- ･nvoSpaceTemp_n（Space Temperature）

Valid Range

The valid range covers from 600.0 to 6540.0 seconds (per 10 seconds).
The setting to 0.0 or 6553.5 seconds makes the automatic updating invalid.
The setting to 0.1 - 599.9 seconds results in 600.0 seconds.
The setting to 6540.1 - 6553.4 seconds results in 6540.0 seconds.

To obtain the output within 10 minutes, set the connecting indoor unit to 30 sets or less.
Please turn ON the switch(SW1-3) on LM ADAPTER.(Factory setting "OFF")
The valid range in this case becomes as 60.0 - 6540.0 seconds (per 10 seconds).
The setting to 0.0 or 6553.5 seconds makes the automatic updating invalid.
The setting to 0.1 - 59.9 seconds results in 60.0 seconds.
The setting to 6540.1 - 6553.4 seconds results in 6540.0 seconds.

Default Value

6553.5seconds (without automatic update)

24 Spacetemp Width

network input config SNVT_temp_p nciAnalogWidth;

This configuration property defines the minimum variation width of the output when nvoSpaceTemp_n (Space Temperature) changes.
The objective variable is given below.
・nvoSpaceTemp_n（Space Temperature）

Valid Range

The valid range covers from 0.5 to 2.0 second (per 0.5℃).
＊The setting to -0.01℃(0xFFFF) result in 1.0℃.
The setting to 2.01 - 327.66 ℃ results in 2.0℃.

Default Value

- 0.01℃(judged as 1.0 ℃)

25 Monitoring Time

network input config SNVT_time_sec nciAnlgMonTm;

This configuration property defines the indoor temperature monitor interval from the LM adaptor to the indoor unit.

Valid Range

The valid range covers from 600.0 to 6540.0 seconds (per 10 seconds).
The setting to 0.0 or 6553.5 seconds results in 600.0 seconds.
The setting to 0.1 - 599.9 seconds results in 600.0 seconds.
The setting to 6540.1 - 6553.4 seconds results in 6540.0 seconds.

To obtain the output within 10 minutes, set the connecting indoor to 30 sets or less.
Please turn ON the switch(SW1-3) on LM ADAPTER.(Factory setting "OFF")
The valid range in this case becomes as 60.0 ～ 6540.0 seconds (per-10 seconds).
The setting to 0.0 or 6553.5 seconds results in 600.0 seconds.
The setting to 0.1 - 59.9 seconds results in 60.0 seconds.
The setting to 6540.1 - 6553.4 seconds results in 6540.0 seconds.

Default Value

6553.5 seconds (judged as 600 seconds)

26 Receive Heartbeat_1

network input config SNVT_time_sec nciRcvHrtBt_1;

This configuration property defines the maximum elapse time from the last update of the network variables (update of input network variable setting values, poll/Fetch request of output network variables).
When the set time has elapsed from the previous update, the initial values (operation enable) will be set automatically.
Update either the input network variables or the output network variables before the set time elapses.
The objective variable is given below.
・nviProOnOff_n（Request Local Prohibit On/Off)
・nviProMode_n（Request Local Prohibit Mode)
・nviProSetP_n(Request Local Prohibit SetPoint)

Poll/Fetch request of output network variable is effect.
By the time it passes setting time, please update an output network variable.
The objective variable is given below.
・nvoProOnOff_n（Local Prohibit On/Off state)
・nvoProMode_n(Local Prohibit Mode state)
・nvoProSetP_n(Local Prohibit SetPoint)

Valid Range

The valid range covers from 600.0 to 6540.0 seconds (per 60 seconds).
The setting to 0.0 or 6553.5 seconds results in 1800.0 seconds.
The setting to 0.1 - 599.9 seconds results in 600.0seconds.
The setting to 6540.1 - 6553.4 seconds results in 6540.0 seconds.

Default Value

6553.5 seconds (judged as 1800 seconds)

27 Receive Heartbeat_2

network input config SNVT_time_sec nciRcvHrtBt_2;

This configuration property defines the maximum elapse time from the last update of the network variables (update of input network variable setting values, poll/Fetch request of output network variables).
When the set time has elapsed from the previous update, the initial values (operation enable) will be set automatically.
Update either the input network variables or the output network variables before the set time elapses.
The objective variable is given below.
・nviThermoOff_n（Request Forced Thermostat OFF)

Poll/Fetch request of output network variable is effect.
By the time it passes setting time, please update an output network variable.
The objective variable is given below.
・nvoThermoOff_n（Forced Thermostat OFF state)

Valid Range

The valid range covers from 600.0 to 6540.0 seconds (per 60 seconds).
The setting to 0.0 or 6553.5 seconds results in 1800.0 seconds.
The setting to 0.1 - 599.9 seconds results in 600.0seconds.
The setting to 6540.1 - 6553.4 seconds results in 6540.0 seconds.

Default Value

6553.5 seconds (judged as 1800 seconds)

28 Effective time_1

network input config SNVT_time_sec nciEffectTm_1;

This configuration property defines the valid time of nviAllOff (Request All Off).
The objective variable is given below.
・nviAllOff（Request All Off）

Valid Range

The valid range covers from 60.0 to 6540.0 seconds (per 60 seconds).
The setting to 0.0 or 6553.5 seconds results in 600.0 seconds.
The setting to 0.1 - 59.9 seconds results in 60.0seconds.
The setting to 6540.1 - 6553.4 seconds results in 6540.0 seconds.

Default Value

6553.5 seconds (judged as 600 seconds)

29 Effective time_2

network input config SNVT_time_sec nciEffectTm_2;

This configuration property defines the valid time of nviAllPro (Request Collective Operation Prohibit).
The objective variable is given below.
・nviAllPro（Request Collective Operation Prohibit）

Valid Range

The valid range covers from 60.0 to 600.0 seconds (per 60 seconds).
The setting to 0.0 or 6553.5 seconds results in 600.0 seconds.
The setting to 0.1 - 59.9 seconds results in 60.0seconds.
The setting to 600.1 - 6553.4 seconds results in 600.0 seconds.

Default Value

6553.5 seconds (judged as 600 seconds)

30 Effective PollFetch

network input config SNVT_switch nciPollFetch;

This configuration property defines the presence of a response to the output network variable poll (Fetch) request when an indoor unit is not connected or when communication with the indoor unit is disabled.
The objective variable is given below.

- ・nvoOnOff_n（On/Off run state）
- ・nvoMode_n（Mode state）
- ・nvoSetP_n（SetPoint state）
- ・nvoLCMode_n（LOSSNAY Mode state）
- ・nvoFanSpeed_n（Fanspeed state）
- ・nvoProOnOff_n（Local Prohibit On/Off state）
- ・nvoProMode_n（Local Prohibit Mode state）
- ・nvoProSetP_n（Local Prohibit SetPoint state）
- ・nvoThermoOff_n（Forced Thermostat OFF state）
- ・nvoOnTime_n（Filter Run Time）
- ・nvoSpaceTemp_n（Space Temperature）
- ・nvoAlarm_n（Alarm state）
- ・nvoErrCode_n（Error Code）
- ・nvoErrAdrs_n（Error Unit Address）
- ・nvoThermoSt_n（Thermo On/Off state_1）
- ・nvoThermo_n（Thermo On/Off state_2）
- ・nvoAllOnOff（Collective On/Off state）
- ・nvoIcMdlsize_n（Model Code）
- ・nvoAllAlarm(Collective Alarm for Indoor Unit)

Valid Range

Poll/Fetch Response	SW1-7：OFF		SW1-7：ON	
	state	value	state	value
response	0	not used	0	not used
	else	not used	1 (*1)	0
no response	1	not used	1 (*1)	0.5% - 100% (*2)

*1:The setting to state=0x02-0xFE is interpreted as state=0x01.
The setting to state=0xFF is invalid.
*2:The setting to over 100% is interpreted as 100%.

Default Value

0(Setting invalid) *Always

31 Effective Offline Mode

network input config SNVT_switch nciOffline;

This configuration property defines the offline mode setting when the LM adaptor power is turned ON.
This setting is valid only for 15 minutes after the LM adaptor power is turned ON.
A Null response is returned if a Poll/Fetch request is issued to the network variables during the offline state.
The objective variable is given below.

- nvoOnOff_n（On/Off run state）
- nvoMode_n（Mode state）
- nvoSetP_n（SetPoint state）
- nvoLCMode_n（LOSSNAY Mode state）
- nvoFanSpeed_n（Fanspeed state）
- nvoProOnOff_n（Local Prohibit On/Off state）
- nvoProMode_n（Local Prohibit Mode state）
- nvoProSetP_n（Local Prohibit SetPoint state）
- nvoThermoOff_n（Forced Thermostat OFF state）
- nvoOnTime_n（Filter Run Time）
- nvoSpaceTemp_n（Space Temperature）
- nvoAlarm_n（Alarm state）
- nvoErrCode_n（Error Code）
- nvoErrAdrs_n（Error Unit Address）
- nvoThermoSt_n（Thermo On/Off state_1）
- nvoThermo_n（Thermo On/Off state_2）
- nvoAllOnOff（Collective On/Off state）
- nvoIcMdlsize_n（Model Code）
- nvoAllAlarm(Collective Alarm for Indoor Unit)
- nvoAllOff_n（Emergency state）
- nvoAllPro（Request Collective Local Prohibit）
- nvoAllAlarmLMAP(Collective Alarm for LM ADAPTER)

Valid Range

Offline Mode	SW1-7：OFF		SW1-7：ON	
	state	value	state	value
disable	0	not used	0	not used
	else	not used	1 (*1)	0
enable	1	not used	1 (*1)	0.5% - 100% (*2)

*1:The setting to state=0x02-0xFE is interpreted as state=0x01.
The setting to state=0xFF is invalid.
*2:The setting to over 100% is interpreted as 100%.

Default Value

0(Setting invalid) *Always

34 Lower Setpoint Cooling

network input config SNVT_temp_p nciCoolLrSetP;

This configuration property defines the temperature setting value for local remote controller cool/dry operation.
The value is set according to nviRmLim (local remote controller temperature range setting).

Valid Range

The valid range covers from 19.0 to 30.0 second (per 1.0 ℃).
The setting to -273.17 - 18.99 ℃ results in 19.0℃.
The setting to 30.01 - 327.66 ℃ results in 30.0℃.

Default Value

-0.01℃(judged as 19 ℃)

NOTE: It is possible to use with an "ME" remote controller.

35 Upper Setpoint Heating

network input config SNVT_temp_p nciHeatUpSetP;

This configuration property defines the upper limit temperature setting value for local remote controller heat operation.
The value is set according to nviRmLim (Request Limit Temperature Setting Range).

Valid Range

The valid range covers from 17.0 to 28.0 second (per 1.0 ℃).
The setting to -273.17 - 16.99 ℃ results in 17.0℃.
The setting to 28.01 - 327.66 ℃ results in 28.0℃.

Default Value

-0.01℃(judged as 28 ℃)

NOTE: It is possible to use with an "ME" remote controller.

36 Local Operation Lock

network input config SNVT_switch nciRmOpLck;

This configuration property defines the local remote controller simple lock setting value.
The value is set according to nviRmLck (Request Simplified Locking).

Valid Range

Operation Lock	SW1-7 : OFF		SW1-7 : ON	
	state	value	state	value
All button	0	not used	0	not used
	else	not used	1 (*1)	0
except ON/OFF button	1	not used	1 (*1)	0.5% - 100% (*2)

*1:The setting to state=0x02-0xFE is interpreted as state=0x01.
The setting to state=0xFF is invalid.
*2:The setting to over 100% is interpreted as 100%.

Default Value

0(All switches)

NOTE: It is possible to use with an "ME" remote controller.

37 Local Display_1

network input config SNVT_switch nciRmDsp_1;

This configuration property defines the presence of the automatic actual operation mode display on the local remote controller.
The value is set according to nviRmLck (Request Simplified Locking) and nviRmLim (Request Limit Temperature Setting Range).

Valid Range

Display	SW1-7 : OFF		SW1-7 : ON	
	state	value	state	value
display	0	not used	0	not used
	else	not used	1 (*1)	0
no display	1	not used	1 (*1)	0.5% - 100% (*2)

*1:The setting to state=0x02-0xFE is interpreted as state=0x01.
The setting to state=0xFF is invalid.
*2:The setting to over 100% is interpreted as 100%.

Default Value

0(display)

NOTE: It is possible to use with an "ME" remote controller.

38 Local Display_2

network input config SNVT_switch nciRmDsp_2;

This configuration property defines the presence of the automatic actual operation mode display on the local remote controller.
The value is set according to nviRmLck (Request Simplified Locking) and nviRmLim (Request Limit Temperature Setting Range).

Valid Range

display	SW1-7 : OFF		SW1-7 : ON	
	state	value	state	value
display	0	not used	0	not used
	else	not used	1 (*1)	0
no display	1	not used	1 (*1)	0.5% - 100% (*2)

*1:The setting to state=0x02-0xFE is interpreted as state=0x01.
The setting to state=0xFF is invalid.
*2:The setting to over 100% is interpreted as 100%.

Default Value

0(display)

NOTE: It is possible to use with an "ME" remote controller.

39 Communication Timing

network input config SNVT_switch nciSet_1;

This configuration property defines the network communication start timing at the powering of the LM ADAPTER.
When it is set as "Initialization" and the initial processing between LM ADAPTER and Indoor unit is complete, communication of Neuron-Chip is possible.
When it is set as "setting time" and the initial processing between LM ADAPTER and Indoor unit is complete, communication of Neuron-Chip cannot be performed.
When the setting time of a configuration property is performed ,communication of Neuron-Chip is attained.

When it is set as "setting time",communication is started at the shortest setting time in the following configuration properties.

・nciStartHrtBt（Send Heartbeat Start Time）
・nciStartOutTm（Send Start Time）
・nciInitStartTm（Initialize Start Time）

Valid Range

Timing	SW1-7：OFF		SW1-7：ON	
	state	value	state	value
initialize	0	not used	0	not used
	else	not used	1 (*1)	0
setting time	1	not used	1 (*1)	0.5% - 100% (*2)

*1:The setting to state=0x02-0xFE is interpreted as state=0x01.
The setting to state=0xFF is invalid.
*2:The setting to over 100% is interpreted as 100%.

Default Value

0(Setting invalid)

Note: Although reception of an instruction input becomes possible after Neuron-Chip operation starts, a state output cannot be performed till the time set up with the configuration properties.

6. Node Object

1n/2n Object Request／Object Status

network input SNVT_obj_request nviRequest;
network output SNVT_obj_status nvoStatus;

This input network variable is used to monitor the LM adaptor for obstacles.
The object status is returned in respected to the object_request input update.

Valid Range

nviRequest		nvoStatus		
object_id	object_request	object_id	invalid_id	invalid_request
0	2:RQ_UPDATE_STATUS	0	0	0
	else	0	0	1
1 to 65535	2:RQ_UPDATE_STATUS	1 to 65535	1	0
	else	1 to 65535	1	1

Object Request supports only object_id and RQ_UPDATE_STATUS.
Object Status supports only object_id , invalid_id and invalid_request.
A response is not output to the object request for 20 minutes after the LM ADAPTER power is turned ON (reset).
If a Poll request or Fetch request is made during this time, "invalid_id=1" and "invalid_request=1" will be returned.

When Transmitted

Object Status is transmitted promptly when object_request is input.

Update Rate

The maximum update rate is not available.

Default Service Type

Acknowledged

Default Value

The default value of Object Request is 0.

AppendixA:Fahrenheit conversion of Centigrade data

The type of the network variable of the temperature currently used by LM ADAPTER is SNVT_temp_p, and expresses temperature data with Centigrade.By local remote controller or the system controller, the Fahrenheit is used for a temperature display and Centigrade data is used for communication between units.
The conversion table of the Fahrenheit and Centigrade is shown in Table-1.
The network variables and configuration properties which use this conversion table are as follows.

SetPoint	- nviSetP_n
SetPoint state	- nvoSetP_n
Space Temperature	- nvoSpaceTemp_n
Lower Setpoint Cooling	- nciCoolLrSetP
Upper Setpoint Heating	- nciHeatUpSetP

Table-1
Conversion table for C/F

Centigrade value(℃)	Fahrenheit value(° F)	Room air temp. Temp. setting
39	102	Room air Temperature
38	100	
37	99	
36	97	
35	95	
34	93	
33	91	
32	89	
31	88	
30	87	Temperature setting range
29	85	
28	83	
27	81	
26	79	
25	77	
24	75	
23	73	
22	71	
21	69	
20	(68)*1	
19	67	
18	65	
17	63	
16	61	
15	59	
14	57	
13	55	
12	53	
11	52	
10	50	
9	48	
8	46	
7	45	

Room air temperature display range 46° F to 102 ° F
Temperature setting range 63° F to 87° F
*Cool/dry operation:67 ° F to 87° F
Heat operation : 63° F to 83° F
Auto operation : 67° F to 83° F

*1:68-degree-F use only a room air temperature display.
A temperature setup cannot be performed on the controller. Moreover, it is referred to as 67-degree-F when 20-degree-C is receive.

Cautions

- Local remote controller and the temperature display of a system controller will be 2-degree-F unit.
- When the conversion formula of the Fahrenheit and Centigrade is used, an error arises.